

## ASSESSING THE LEGAL STANDARD FOR PREDICTIONS OF DANGEROUSNESS IN SEX OFFENDER COMMITMENT PROCEEDINGS

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Advocates and courts legitimize sex offender commitment laws by claiming the laws confine only those who are “highly likely” to engage in sexual violence. This article proposes a definition of “probability” of future harm and assesses the legal probability thresholds commitment courts actually use. Using published information about recidivism and actuarial prediction, the authors concludes that moderate, but not extravagant, claims about legal probability thresholds are supportable but only on a rather optimistic set of assumptions. The authors recommend that sex offender commitment courts use the proposed methods to quantify judicial standards and findings about prediction. This will allow the claims for legitimacy to be more readily assessed.

### I. Introduction

Civil commitment laws aimed specifically at sex offenders have made a resurgence.<sup>1</sup> Like standard mental health commitments,<sup>2</sup> sex offender commitments entail a three-part proof formula. To commit an individual, the state must prove that (a) the individual has engaged in harmful sexual conduct in the past,<sup>3</sup> (b) the individual currently suffers from a mental disorder,<sup>4</sup> and (c) the individual will likely engage in future acts of harmful sexual misconduct.<sup>5</sup> One of the central justifications for the deprivation of liberty entailed in civil commitment for sex offenders is that only those offenders who are highly likely to commit future acts of sexual violence are eligible to be committed. This limitation is necessary if the State’s interest in protecting its citizenry from sexual attack is to be sufficiently compelling to warrant the confinements.

This article evaluates that claim by developing a quantitative estimate of the standard courts actually used as they judge whether proof of predicted future harm is sufficient. Section II outlines some of the legal issues involved in sex offender commitments and introduces the empirical issues involved in making valid predictions of future dangerousness. The third section offers a definition of dangerousness, and quantifies the claims of proponents of sex offender commitments and committing courts. In section IV, this quantified standard is compared with empirically derived estimates of the criteria currently in use in the courts. This section reviews the current state of the art of predicting sex offender recidivism, and uses Bayes’ theorem to place bounds around the range of

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possible levels of predictive accuracy under a variety of assumptions. Finally, section V concludes that moderate, but not extravagant, claims about legal thresholds for probability are supportable but only on a rather optimistic set of assumptions. It recommends that sex offender commitment courts insist on quantification of prediction testimony,<sup>6</sup> and that they quantify their own judicial findings about prediction, so that the true distribution of the risk of error in prediction can be seen.<sup>7</sup>

## II. The Legal and Empirical Context of Predictions of Sex Offender Recidivism

Prediction of future violence serves an important role in sex offender commitments. “Dangerousness” is one of two constitutionally required elements for civil commitment.<sup>8</sup> The policy justification for sex offender commitments is the protection of the public from the “most dangerous” sex offenders.<sup>9</sup>

There is a continuing debate about whether predictions of dangerousness are accurate enough to support deprivation of liberty.<sup>10</sup> As in other civil commitment settings, the stakes in these determinations are high.<sup>11</sup> The debate is especially important in the context of sex offender commitments, because the consequences of the predictions are so severe. If predictions about future violence are too optimistic, sexual violence may result. Unduly pessimistic predictions result in unnecessary, prolonged deprivations of liberty. In addition, sex offender commitments entail treatment that is expensive<sup>12</sup> and intrusive,<sup>13</sup> while sexual violence is exceedingly destructive.<sup>14</sup> Thus, both types of prediction errors are costly in many ways.<sup>15</sup>

The questionable status of dangerousness predictions has not dissuaded courts from considering them in sex offender commitment determinations, however. Three state supreme courts have upheld sex offender commitment laws against constitutional challenges. Those courts, explicitly or implicitly, acknowledged the problematic nature of dangerousness predictions, but upheld their use in sex offender commitments as constitutional.<sup>16</sup> To date, one state supreme court<sup>17</sup> and one federal district court<sup>18</sup> have struck down sex offender laws as unconstitutional, but neither of those courts based its holding on concerns about predictions.<sup>19</sup> Indeed, it seems well established that there is no constitutional impediment to using predictions of dangerousness in legal proceedings, up to and including those that may result in loss of liberty or death.<sup>20</sup> As a legal matter, prediction is not, in all of its forms and for all purposes, so inaccurate as to violate the due process clause.

Nevertheless, statutory,<sup>21</sup> evidentiary,<sup>22</sup> and professional<sup>23</sup> standards operate to limit prediction testimony. Despite the rejection of broad-brush constitutional challenges to the admission of predictions of future violence, there may be more finely tuned constitutional limits on the use of predictions in the context of sex offender commitment proceedings. At some point the validity of prediction testimony becomes so attenuated that it is ineffective to establish the requisite certainty of harm that makes the state’s interest in preventing that harm “compelling” as required by the due process clause.<sup>24</sup>

In our evaluation of this claim, we use Professor Brooks’s analysis of the concept of dangerousness. Professor Brooks suggests that “dangerousness” can be analyzed into four components: (a) the magnitude of harm; (b) the probability that the harm will occur; (c) the frequency with which the harm will occur, and (d) the imminence of the harm.<sup>25</sup> In making the claim that only the “most dangerous” offenders are subject to commitment,<sup>26</sup>

it is clear that proponents are referring to at least the first and the second of these components.

Sex offender commitment statutes and cases have been most detailed in specifying the magnitude of harm required for commitment. The Washington, Wisconsin and Minnesota laws enumerate certain types of criminal behavior that are sufficient predicates for sex offender commitment.<sup>27</sup> The Minnesota appellate courts have established standards on the magnitude of harm<sup>28</sup> and the frequency of harm.<sup>29</sup> As to the imminence of harm, none of the statutes places any time horizon on the dangerousness element, either retrospectively or prospectively.<sup>30</sup> The Washington Supreme Court required a showing of a recent overt act, but only for those (few) individuals who are out of custody immediately prior to their sex offender commitment proceeding.<sup>31</sup> The Wisconsin Supreme Court and Minnesota Court of Appeals have rejected claims based on imminence.<sup>32</sup>

As stated above, courts have been hostile to constitutional attacks based on the second of Brooks's dangerousness components—the certainty of the harm. However, implicit in the claim that only the most dangerous offenders are subject to sex offender commitment are four important assumptions. Specifically, this claim implies that (a) the probability of dangerousness is susceptible of measure, (b) there is a way to discriminate between predictions of higher and lower probability, (c) there are standards that allow commitments based on the former while excluding confinement based on the latter, and (d) these standards are, in fact, enforced. As stated above, courts have refused to question the first of these assumptions—that dangerousness is susceptible of measure.

This article is addressed to the last two assumptions—that there are standards for evaluating the probability of predicted dangerousness and that these standards are enforced. This article seeks to encourage the articulation of standards by demonstrating how prediction standards can be clarified and quantified. In so doing, it is primarily concerned with the second of Brooks's elements, “probability” of harm. The probability standard carries a big part of the burden of justifying sex offender commitments, because it influences how the risk of error is to be distributed between sex offenders and the public.<sup>33</sup> Errors in sex offender commitments arise because the required decision (commitment or release) is dichotomous and is based on imperfectly perceived continuous data (probability of harm weighted by magnitude of harm).<sup>34</sup> The decision maker commits if she perceives that the probability-magnitude product exceeds the legal “standard of commitment.”<sup>35</sup>

Erroneous commitment decisions arise from two sources. One source is the imperfection in the decision maker's perception. These errors arise when the decision maker releases a highly dangerous individual on the basis of the misperception that the individual poses a lower risk, or vice versa. The other source of error arises from the probabilistic nature of risk. Some individuals who are correctly perceived to be “high risk” will, nonetheless, not engage in harmful behavior, whereas some “low-risk” individuals will. Committing the first group is error, as is releasing the second.<sup>36</sup> It is important to emphasize that these sources of error are entirely independent of one another. Unless the test applied is infallible, even flawlessly executed testing procedures will result in nontrivial numbers of classification errors. Whatever error is introduced by the simple vagaries of human perception is fully independent of this error.

Table 1  
*Two by Two Contingency Table*

| Decision | Outcome            |                      |
|----------|--------------------|----------------------|
|          | Violent            | Nonviolent           |
| Commit   | Correct commitment | Erroneous commitment |
| Release  | Erroneous release  | Correct release      |

Whatever their source, errors fall into one of two categories: erroneous commitments and erroneous releases. Similarly, correct decisions are of two types. Thus, all commitment decisions can be classified by a 2 × 2 table, such as that shown in Table 1.<sup>37</sup>

In section III, we aim to locate and quantify the “probability of harm” standard that courts actually use in making the commitment decision. The probability of harm standard is the major tool that courts use to allocate the risk of error in commitments. If courts commit only when they find the probability of harm to be extremely high, then they increase the possibility of erroneous release and additional sexual violence. On the other hand, if they set the probability of harm standard at a low level, then erroneous commitments will increase. Thus, the probability of harm standard determines how the burden of error is distributed between the public and individuals subject to commitment.<sup>38</sup>

Advocates for sex offender commitment schemes often point to high probability thresholds as part of their justifications for the laws.<sup>39</sup> Appellate courts in Minnesota, Wisconsin, and Washington state that they require a high level of probability for commitment. The Minnesota statutes require a showing that future violence is “likely.”<sup>40</sup> The Minnesota Supreme Court has interpreted this to mean that the violence must be “highly likely.”<sup>41</sup> Like the Minnesota law, the Washington statute requires proof that an individual is “likely” to engage in sexual violence.<sup>42</sup> The Washington Supreme Court construed this standard as identifying persons whose “likelihood of re-offense is extremely high.”<sup>43</sup> The Wisconsin statute requires proof of a “substantial probability” of future sexual violence.<sup>44</sup> In upholding the statute against constitutional attack, the Wisconsin Supreme Court described the commitment group as those who are “most likely” to engage in sexual violence, “distinctively dangerous,” and “only of the most dangerous of sexual offenders.”<sup>45</sup> None of the courts, however, has attempted to quantify the standards.

Despite the absence of quantified standards, sex offender commitment cases have been proceeding, and courts have been incarcerating sex offenders on the basis of predictions of future violence. In this article, we take the usual question about dangerousness—are predictions sufficiently accurate to meet legal standards for civil commitment?—and turn it around. The purpose is to estimate the *de facto* standards for commitment by examining the nature of the predictive proof that has been accepted by the courts. In other words, we attempt to understand what meaning courts give the terms *likely* or *highly likely* by examining their behaviors as they apply these terms. There is good evidence that probability standards actually in use by the courts fall well below the standards that the appellate courts claim are in use.

What do courts and legislatures mean when they use terms like *likely*, *highly likely*, *extremely high*? In *Young*, the Washington Supreme Court quoted a prominent sex offender scholar: “ ‘using theoretically relevant and empirically tested predictors, predictive

accuracy [of sexual recidivism] can realistically be expected to be in the 80% range’.” The Court used this quote to support its assertion that the “likelihood of reoffense is extremely high” among those subject to commitment.<sup>46</sup> Some recent scholarship has offered relatively sanguine assessments of the possibility of prediction.<sup>47</sup> Though the first generation of scholarship on prediction concluded that predictions were wrong two out of three times, a second generation has criticized the methods of the first and claimed advances in prediction.<sup>48</sup> Perhaps courts, influenced by this scholarship, intend to apply standards that require high levels of probability of future violence.

To provide a context for evaluating the quantitative estimates of the legal standards actually used by courts in sex offender commitments, we offer two benchmarks for the qualitative terms *likely* and *highly likely*. In line with the *Young* court’s citation of the 80% accuracy figure as an “extremely high” likelihood standard, we set the two benchmarks at 50%, which we will take to correspond to the legal standard of “likely” to reoffend, and 75%, for the “highly likely,” “extremely high” standard.

If our estimates are correct, then the actual standards used are quite different from those claimed by the courts. Even on the most optimistic assumptions, the actual probability standards used by the courts do not reach the 75% mark. With realistic but still optimistic assumptions, predictions of future violence could exceed the 50% “likely” rate. On pessimistic assumptions, courts are applying a standard that commits people with probabilities of recidivism as low as 30%.

### III. Defining “Probability” of Future Violence

To estimate the probability standards in use by sex offender commitment courts, we must first attempt to define what we are measuring. What is it that legislatures and courts are referring to when they set thresholds based on “likelihood” or “probability” of behavior by an individual? To answer this question, we first allude to a distinction proposed by Monahan and Wexler.<sup>49</sup> They argue that dangerousness determinations can be analyzed into two separate standards: the standard of proof and the standard of commitment.<sup>50</sup> The standard of proof is the rule that the trier of fact follows in resolving uncertainties in the evidence. It is expressed using terms like “clear and convincing evidence” and “beyond a reasonable doubt.” The standard of commitment measures the probability of future violence and is expressed in terms such as *likely* and *highly likely*. It is the latter, the “standard of commitment,” with which we are concerned.

We suggest that probability statements about individuals are really statements about groups or classes of people to which the subject individual is asserted to belong.<sup>51</sup> Suppose that we understand the term *likely* to mean “greater than 50% chance.” Then the assertion that X is “likely” to reoffend means that X “belongs” to a group or class more than half of whose members will reoffend. But individuals are “members” of many classes or groups, so each individual has associated with him or her many probabilities of future violent behaviors.<sup>52</sup> We suggest that the probability standard in use by a court is appropriately measured by reference to the group of people whom the court commits. We call this group the *commitment class*.

The court’s standard of commitment is equal to the proportion of the commitment class who, but for the confinement, would commit a violent sexual crime. Putting the matter slightly differently, the standard of commitment in use by a court is the frequency of (prevented) recidivism among the group actually committed by that court (i.e., among

the group we call the commitment class). Referring to Table 1, the commitment standard is equal to the ratio of correct commitments (violent outcome) to total commitments.<sup>53</sup> It is this standard that we propose to estimate and then to test against the claims of courts and advocates that sex offender commitment schemes commit only sex offenders who are “likely” or even “highly likely” to recidivate.

Two matters require clarification before we move on to the task of quantifying the standards in use by courts. First, we clarify how our work fits in with Monahan and Wexler’s bifurcated legal standard proposal. Second, we discuss how claims about the accuracy of prediction, such as the 80%-accurate claim in *Young*, fit into the legal standards for commitment.

Recall that Monahan and Wexler propose a bifurcated legal standard for analyzing commitment cases. The “standard of proof” measures the fact finder’s certainty about the evidence, while the “standard of commitment” measures the likelihood of future harmful behavior. Though Monahan and Wexler call the relationship between the two standards “intricate and complex,”<sup>54</sup> the bifurcation suggests that these are two concepts with clear and distinct meanings. At the risk of oversimplifying, one might think of the standard of proof as a standard for measuring epistemological uncertainty, and the standard of commitment as a standard for measuring ontological uncertainty. That is, one would bifurcate the uncertainties in prediction into two categories: the epistemological uncertainties are those arising from our imperfect ability to perceive,<sup>55</sup> and the ontological uncertainties are those arising from the undetermined nature of the world.<sup>56</sup>

We agree that the relationship between the two legal standards is intricate and complex. Without extensive argument, we submit that the legal “standard of commitment” ought to be understood to include both kinds of uncertainty. That is, when a court claims that it commits only those who are “highly likely” to recidivate, the standard should be understood to measure both the uncertainties arising from imperfect ability to perceive the world, and those arising from the “objective” indeterminacy of the world. Our definition of the standard of commitment captures both forms of uncertainty. The proportion of recidivists in the commitment class is the proper measure of the actual standards the courts are using. This ratio is the probability that a person actually committed by the courts would have been a recidivist had it not been for the commitment.

We make this suggestion in part because we think that this is what courts and experts mean when they discuss probabilities of future harm, in part because we think that the two forms of uncertainty are probably impossible to untangle successfully, and in part because separating the two forms of uncertainty into two different legal standards will obscure a key feature of prediction—the interaction between accuracy and base rates. As we shall describe more fully below, base rates refer to the prevalence of a given characteristic (here, sexual violence) in a given population. Accuracy refers to the ability of a selection procedure (clinician, test, judge) to correctly distinguish among those who will, and those who will not, exhibit that characteristic.

To understand this point, consider the following scenario: In a sex offender commitment case, expert G testifies that the “weighted average” rape reconviction rate for rapists is 23%.<sup>57</sup> However, there is a subgroup, rapists whose special characteristics are associated with a 75% probability of reoffense. G testifies that she can identify members of that subgroup by assessing a number of factors identified in the research literature as related to recidivism, weighing them against each other, and coming to a clinical judg-

ment based on her years of experience in working with sex offenders. She enumerates the factors, provides details about how she assessed the respondent with respect to each factor, explains which she found most significant, and renders her judgment that the respondent is in the subgroup and therefore has a 75% risk of reoffending. She testifies that the research literature shows that predictions of sexual violence on the basis of the factors she has used have been shown to have an 80% rate of accuracy.<sup>58</sup> On the basis of this testimony, the court commits the respondent.

Let us consider how we should understand this example and assess the court's standard of commitment. First, it would be intuitively tempting to bifurcate the witness's testimony into Monahan and Wexler's two legal standards. The 75% probability of sexual recidivism relates to the "facts" in the world, and is thus measured against the legal standard of commitment. The 80% accuracy seems to measure the witness's ability to perceive the facts, and is laid against the clear and convincing standard of proof.<sup>59</sup>

Using this analysis, we might say that the court's standard of commitment is 75% (the probability associated in G's testimony with the respondent's recidivism). At a slightly more sophisticated level, we might be tempted to multiply the probability of recidivism for members of the subgroup (75%) by the level of certainty that the respondent is in the subgroup (80%) to arrive at a "net" probability of recidivism among those committed of 60%.<sup>60</sup>

Both of these analyses, although intuitively appealing, would be significantly misleading, because they both ignore the interaction between accuracy of prediction and base rates of violence. As we show below,<sup>61</sup> the actual probability of recidivism among individuals committed on this expert's testimony ranges between 27% and 54%, depending on the assumptions made about the base rate of violence and the size of the special subgroup.<sup>62</sup>

#### **IV. Generating Estimates of the Standard of Commitment Actually in Use by Sex Offender Commitment Courts**

Given that our goal is to estimate the probability of sexual recidivism associated with the commitment class—the group of sex offenders who are actually committed—it is appropriate to examine the practice of sex offender commitments in one state. We choose Minnesota because one of us has extensive experience with the sex offender commitment practice in Minnesota, and because Minnesota has the most extensive corpus of contemporary sex offender commitment cases. During the period between 1990 and 1995, approximately 75 individuals have been committed as sex offenders in Minnesota.<sup>63</sup>

One of the most striking observations about the Minnesota experience is that, to our knowledge, very few courts have denied or dismissed a sex offender commitment petition for failure to meet the probability standard of commitment.<sup>64</sup> In contrast, there is a small, but not insubstantial, body of cases that have denied, dismissed, or reversed sex offender commitments on other grounds. Appellate courts have reversed commitments on grounds that the proof of mental disorder,<sup>65</sup> magnitude of harm,<sup>66</sup> or frequency of harm<sup>67</sup> were insufficient. Thus, the paucity of probability-based reversals appears not to be the result of a blanket inattention to these cases by the courts, or to the informality of our survey, but rather truly reflective of the courts' probability standards.

We think that this observation is significant. It apparently means that almost all predictions of future sexual violence that are presented to the courts have met or exceed-

ed the courts' standards for commitment. Thus, if we estimate the probability of recidivism among those picked by the best extant nonjudicial selection process, that probability will represent a ceiling on the standard of commitment actually in use by the courts.

We next set out two models of the process by which the "commitment class" is selected in Minnesota sex offender commitment cases. Using published information about sex offender recidivism and prediction, we then develop estimates for the probability of recidivism among members of these commitment classes. These estimates measure the actual commitment standards being used by Minnesota courts.

In Model 1, the process begins with the group of sex offenders being released from prisons and ends with a much smaller group of persons committed. We call the first group the *prison-release class* and the final group the *commitment class*. Sex offenders about to be released from prison are screened by mental health professionals using a screening tool developed by the Minnesota Department of Corrections. If the score on the tool passes a set cutoff or has other special concerns, the case is referred to the proper county (prosecuting) attorney, who decides whether or not to bring a petition.<sup>68</sup> That process may involve consultation with one or more mental health professionals.<sup>69</sup> If a petition for commitment is filed, the respondent has the right to at least two independent examinations.<sup>70</sup> Each examiner offers an opinion about diagnosis and prediction. The predictions are based on clinical judgments, though they may take into account psychometric testing and a variety of factors that have been identified in the research literature as associated with sexual recidivism.<sup>71</sup> Each expert gathers information about the factors, characterizes their applicability to the respondent, determines relative weights, and produces a judgment that the respondent will (or will not) reoffend sexually. If all of the experts agree that the respondent will not (or is unlikely to) reoffend, the petition is dropped voluntarily by the county attorney. However, if at least one expert judges that the respondent will reoffend, the petition most likely proceeds to trial.<sup>72</sup> If, at the trial, the state proves the past conduct and the mental disorder element,<sup>73</sup> the respondent will be almost always be committed.<sup>74</sup>

Model 2 is the same as Model 1, except for the following: The experts' assessments are not dichotomous "recidivist-nonrecidivist" statements, but rather statements of the probability of sexual violence.<sup>75</sup> If at least one expert testifies that the respondent is "likely" or "highly likely" to recidivate (depending on the standard espoused by the court), the petition will most likely be granted by the court (assuming the other elements have been proven).

Using a small number of assumptions and nonproblematic application of Bayes' theorem,<sup>76</sup> we can calculate the probabilities of recidivism associated with the commitment classes under these two models. Under both models, the commitment class consists of all of those individuals who have been identified as recidivists (or probable recidivists) by means of the multistep selection process. Under Model 1, if we know the base rate for sexual recidivism for the prison-release class (convicted sex offenders from whom commitment candidates are selected) and the rate at which the selection process is able to pick out recidivists from the prison-release class (accuracy), we can calculate the probability of recidivism for the commitment class. The estimate for Model 2 involves some additional assumptions and will be discussed below.

First, let us examine conceptually why the probability of recidivism for the commitment class will be a function of accuracy and base rate. (A mathematical treatment of this



point is contained in the Appendix.) We will use the term *accuracy* to mean the number of correct assessments divided by the total number of assessments made in the selection process. Thus, accuracy measures the proportion of all predictions that are correct and all that are incorrect. This is the measure to which the *Young* court's quote from Dr. Quinsey refers.<sup>77</sup> This concept is sometimes referred to in the literature as the "percent correct" assessments.<sup>78</sup>

Recall that the probability of recidivism among the commitment class is the ratio of correctly committed individuals (those who would recidivate were it not for the commitment) compared with the entire commitment class. The entire commitment class is made up of individuals who are correctly committed, along with those who are erroneously committed (those who would not have recidivated had they not been committed). To compute the numerator and the denominator of this ratio, we need to know the accuracy with which recidivism is predicted.

But knowing the accuracy of prediction is not sufficient to allow the calculation of the probability of recidivism in the commitment class. We must also know the base rate of recidivism in the group from which the commitment class is selected (the prison-release class). Recall that the base rate is the proportion of those in the prison-release class who would recidivate if they are not committed. We must know this proportion because it controls the relative sizes of those correctly committed and those erroneously committed. The larger the proportion of nonrecidivists in the prison-release class, the greater the number of erroneous commitments compared with correct commitments. This, in turn, affects the probability of recidivism in the commitment class.

The interaction of base rates and accuracy is somewhat counterintuitive. The following examples may help clarify the concepts. Suppose a scientist has developed a blood test that can detect cancer with 99% accuracy. In other words, in 99 out of every 100 administrations of the test, the result correctly indicates whether or not the individual has cancer. The results of the test are erroneous in only 1 of 100 administrations. Suppose the test is administered to 1,000 individuals (the screening group). A group of individuals test "positive" on the test, an indication of cancer. What is the probability that these individuals actually have cancer? The answer is not 99%. Rather, the answer depends on the base rate, or prevalence, of cancer in the group to which the test was administered.

Consider two scenarios. Suppose only 1 in the 1,000 members of the screening group actually has cancer (i.e., suppose the base rate for cancer is 1 in 1,000). The test, being 99% accurate, will almost certainly correctly identify the one cancer victim as positive for cancer. But recall that the test errs in 1% of the cases. Thus, as the test is administered to the 999 individuals who do not have cancer, it will incorrectly identify 1% of them (9.9 individuals) as positive. Rounding, we observe that the test will identify 10 cancer-free individuals as positive for cancer. Thus, the test has identified a total of 11 individuals as positive for cancer, but only 1 truly has cancer. Thus, the probability that any of the 11 "positives" actually has cancer is only 1/11, or about 9%.

Now consider a second scenario. Suppose that the test is administered to a group with a known prevalence of cancer of 50%. The test will correctly identify 99% of the 500 cancer patients (495), but it will err on 1% of the 500 cancer-free individuals (5), identifying them as cancer victims. Thus, the test will show 500 positive for cancer (495 + 5). The probability that anyone of those 500 actually has cancer is 495/500 or 99%.

As these two examples show, the probability that a "positive" result is true varies

with the base rate of the group on which a test is applied. If a condition is relatively rare in a group, even accurate tests identify lots of “false positives.” The relatively large size of the “negative” subgroup (those who do not have the condition) serves to “magnify” even small errors in the test.

Let us return our attention to the focus of the article, estimating the probability of recidivism in the commitment class for sex offender commitments. Following the method just outlined, we can calculate that probability if we know, or can estimate, the base rate of sexual recidivism in the group from which individuals are selected for commitment, and the accuracy of the process used to make the selection.

Let us focus first on estimating the accuracy of the process of selection. Recall that in our Model 1, the process of selection is a multistep process, usually relying on a combination of test results and the clinical judgments of one or more mental health professionals.<sup>79</sup> Because it is almost impossible for a mental health professional to measure his or her own accuracy in predicting sexual recidivism, we propose a method for estimating the upper limit for accuracy.

Meehl’s thesis,<sup>80</sup> confirmed in many contexts,<sup>81</sup> is that clinical judgment is at best as good as, but often worse than, actuarial methods.<sup>82</sup> Thus, the accuracy achievable by actuarial prediction methods is a reasonable estimate for the upper limit on the accuracy of the sex offender commitment selection process. On the basis of the following analysis of the literature on actuarial prediction of violence in general, and sexual violence in particular, we conclude that .75 is a reasonable estimate of the *upper limits* of accuracy attainable by the sex offender commitment selection process.<sup>83</sup>

Researchers, using sophisticated mathematical modeling, have designed actuarial prediction methods with accuracy rates hovering around .70 or .75. Harris, Rice, and Quinsey<sup>84</sup> developed an instrument for predicting violent recidivism among mentally disordered offenders. Their method had accuracy scores ranging from .47 to .74. Quinsey reports a method with an accuracy of .74,<sup>85</sup> and another with an accuracy of .80.<sup>86</sup> Villeneuve and Quinsey’s method classified .66 correctly.<sup>87</sup> Quinsey, Rice, and Harris reported accuracy of .77 and .72 in predicting sexual recidivism.<sup>88</sup> The actuarial instrument developed by the Minnesota Department of Corrections for use as a screening tool for sexual recidivism had an accuracy rate of .65 in a retrospective study.<sup>89</sup> Otto reports on a study (Klassen & O’Connor) that had an overall correct classification rate of .76.<sup>90</sup> Prentky, Knight, and Lee’s study of child molesters showed a correct classification rate of 73%.<sup>91</sup>

Note that accuracy can itself be analyzed into two factors: sensitivity and specificity. Sensitivity is the rate at which a test identifies recidivists correctly. Specificity is the rate at which it identifies nonrecidivists correctly.<sup>92</sup> In our initial calculations below, we make the simplifying assumption that these two rates are equal to each other (and therefore equal to the overall accuracy).<sup>93</sup> We follow with a brief discussion of prediction schemes in which these two measures are significantly unequal.

It might be argued that the cumulative accuracy of seriatim review by a number of different evaluators will tend to increase the accuracy of the entire process. But this would be true only if the clinicians regularly knew when to overrule the actuarial studies or their colleagues’ predictions. Meehl’s thesis shows that they do not. Further, a weak link in the chain could actually decrease accuracy. Quinsey reports that clinicians often rely on “highly salient” variables that are unrelated to, or actually negatively related to

future violence.<sup>94</sup> Clinical judgments could pass along to the next stage a weaker rather than stronger mix of recidivists. However, Harris, Rice, and Quinsey suggested that clinical judgment can sometimes add to the accuracy of actuarially determined risk:

[C]linicians can use dynamic (changeable) information such as progress in treatment, change in procriminal attitudes, and the amount and quality of supervision in the post release environment to adjust the risk level computed by the actuarial prediction instrument. If adjustments are made conservatively and only when a clinician believes, on good evidence, that a factor is related to the likelihood of violent recidivism in an individual case, predictive accuracy may be improved.<sup>95</sup>

There are two reasons why clinical judgments about the group referred for commitment are unlikely to increase the accuracy of the selection process. First, there is a ratchet phenomenon in the selection process. Most sex offender commitments involve the clinical judgments of multiple experts. In some circumstances, having multiple assessments available to a decision maker might improve accuracy (or at least reliability<sup>96</sup>). In this context, however, it is likely that it actually makes predictions less accurate. The operative rule in sex offender commitments seems to be that if at least one expert says that the respondent is dangerous, then a finding to that effect will be made by the court. This process will tend to dilute the mix of recidivists in the commitment group, because it favors clinical judgments that are most prone to mistakenly identify nonrecidivists as recidivists.

The second reason why Harris, Rice, and Quinsey's suggestion is unlikely to improve on actuarial accuracy is that they recommend reliance on dynamic factors such as treatment response and level of supervision available. But these factors are likely to be trusted only when they point to greater, rather than lesser, risk. They are "changeable" and are therefore likely to be found unreliable bulwarks against risks that otherwise seem intolerable.<sup>97</sup> In a case we worked on, for example, the trial court constructed its probability analysis with no regard for testimony about strict (though impermanent) parole supervision.<sup>98</sup>

We conclude that our estimate of .75 should serve as a ceiling for the accuracy for the entire selection process.

We turn now to the task of estimating the base rate of sexual violence among the group from whom sex offenders are selected for commitment. Most broadly, this group is composed of all sex offenders who are about to be released from prison. Some might object that this prison-release group is too large and contains many first-time offenders and offenders without serious mental disorders. The entire prison release group might have a base rate of sexual recidivism that is lower than a subgroup composed of repeat offenders with serious mental disorders. Some might argue that it is from this latter group that selections are actually made. We have therefore surveyed the literature on sex offender recidivism and suggest a plausible range for an estimate of the base rate of sexual recidivism to use in our calculations. As the following discussion shows, we conclude that the appropriate base rate is likely to fall somewhere between 20% and 45%.

In one of the most extensive studies of rape recidivism, the Department of Justice found that the base rate of re-arrest for rape among rapists released from prison was .077.<sup>99</sup> Critics object that this study's base rate is too low.<sup>100</sup> Base rates for sexual recidivism are variable, depending on a number of factors, including length of follow-up,

type of offenses, criminal history, and so on.<sup>101</sup> The Department of Justice study covers a broad group for a relatively short period,<sup>102</sup> and for this reason shows a relatively low rate of recidivism. In addition, the underreporting of sexual assault,<sup>103</sup> and less than perfect clearance rate for sex crimes<sup>104</sup> means that re-arrest rates are likely to be lower than actual re-offense rates. For example, Barbaree and Marshall<sup>105</sup> report that “unofficial” sources show 2.4 times more “reoffenses” than “official” records. On the other hand, convicted sex offenders are likely to be less skilled at evading detection and more likely to be suspected than the average.<sup>106</sup> Further, the worst offenders are likely to be repeat offenders;<sup>107</sup> their chances of evading detection diminish as the number of offenses increases.<sup>108</sup> This point is supported by Barbaree and Marshall’s results. When they counted the number of persons who reoffended, rather than the total number of reoffenses, the rate of recidivism was almost identical to the comparable average reconviction rate of 20.4% found by Quinsey.<sup>109</sup> That is, for convicted sex offenders, the unofficially measured “reoffense” rate may not be far off from the officially measured “reconviction” rate.<sup>110</sup>

Quinsey reviewed the base-rate studies on sexual recidivism and reported that the “weighted average” for reconviction rates for rapists in those studies was 22.8% with a range of 10% to 36%.<sup>111</sup> The weighted average for child molesters was 20.4%, with a range of 4% to 38%.<sup>112</sup> Quinsey, Rice, and Harris<sup>113</sup> report a base rate of sexual reconviction in a group of sex offenders at a maximum security psychiatric facility at 27.5% for the entire group, 27% for child molesters, 20% for rapists, and 34.5% for a group of “mixed” offenders. Hall’s meta-analysis of 12 treatment studies found average recidivism rates of 19% for those in the treatment groups, and 27% for those not treated or in the control group.<sup>114</sup> In Minnesota, the 4.5-year sexual re-arrest rate for sex offenders released from prison has been measured at 16.7%.<sup>115</sup> In Washington State, the measured sex-offense re-arrest rate for the same group was 12%, with a follow-up period of 7 years.<sup>116</sup> Among a group of more serious offenders, the sex offense reconviction rate was 21% and the re-arrest rate 31% with an average follow-up period of 4 years.<sup>117</sup> However, those identified as “high risk” in the Washington community notification program had only a 14% rate of re-arrest for a new sex offense in a 54-month follow-up period,<sup>118</sup> and another study from Washington State shows sex-offense re-arrest rates for repeat sex offenders at 24%.<sup>119</sup> Prentky, Knight, and Lee’s study of 111 child molesters who were discharged from the Massachusetts Treatment Center showed a recidivism rate for sexual offenses of 35%.<sup>120</sup> Hanson and Bussière’s meta-study covered 87 studies of sex offender recidivism, involving 61 different data sets, with an average 4–5-year follow-up period.<sup>121</sup> They reported the overall recidivism rate was 13.4% for sexual offenses ( $n = 23,393$ ).<sup>122</sup>

Using these numbers, we can begin to bracket the likely range of recidivism probabilities in the commitment class. A 20% base rate for sexual recidivism seems reasonable as a low-end estimate for the group of sex offenders who are set for release from prison. Twenty percent approximates the weighted average base rates for recidivism calculated by Quinsey. It is greater than the 7.7% rearrest rate in the Department of Justice study, increased by Barbaree and Marshall’s 2.4 multiplier for supplementing official with unofficial records ( $7.7\% \times 2.4 = 18.5\%$ ). We take 45% as the top bracketing assumption because it is higher than any rate in the range reported by Quinsey, and is about twice the average base rates actually measured. It is high enough to include results such as Hanson

et al.'s, who found the rate of recidivism for all violent crime (not just sexual) in a long-term study of child molesters to be 42%,<sup>123</sup> a figure comparable to that found by Quinsey.<sup>124</sup>

Figure 1 shows the resulting probability of recidivism in the commitment class under these bracketing base-rate conditions. It also brackets the accuracy rate of the prediction process between 50%, which assumes that the prediction process is at least as good as chance, and 80%, which would make the process as good as the best actuarial methods. It shows the probability of recidivism among the commitment class to be between 20% and 77%.<sup>125</sup> We assume that a "good" selection process will have an accuracy of 70%, approaching, but somewhat below, the average rate for actuarial methods. Such a process would result in a commitment class with a probability of re-offense between 37% and 66%.

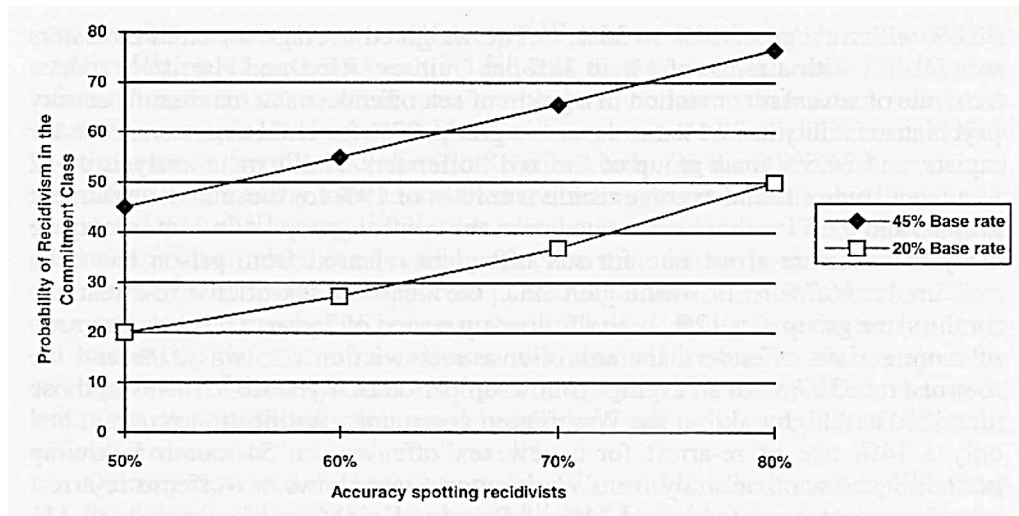


Figure 1. Probability of violent sexual recidivism in the commitment class as a function of base rate in the referral class and accuracy of the selection process.

The diagonal lines in Figure 2 show the combinations of base rates and accuracy that will yield commitment classes with probabilities of recidivism of 50% and 75%, respectively. Conditions above and to the right of the diagonal lines yield probabilities above those figure. The heavy rectangle shows the conditions that seem achievable given what is presently known about probable base rates and levels of predictive accuracy. This rectangle brackets predictions that are at least as good as chance, but no better than the actuarial methods. It assumes base rates to be within the range reported in the literature.

From this figure, we observe that a standard of commitment of 50% appears achievable but only under favorable conditions. For example, a process that had "good" accuracy (70%) could achieve a 50% standard of commitment only if the prison-release class had a base rate of recidivism of 30% or more. Under less favorable conditions, the standard of commitment achievable by the courts will be less than 50%. For example, if the selection process is only average (65% accurate) and the base rates are equal to those measured for released sex offenders en mass (7.7% or 15%), the probability of recidivism in the commitment group will be well below 50%. On the basis of these estimates, we can rule out the possibility that sex offender commitment courts are using a standard of

commitment that approximates 75%. As seen in Figure 2, the line representing a 75% standard of commitment lies entirely outside of the area of possible proof.

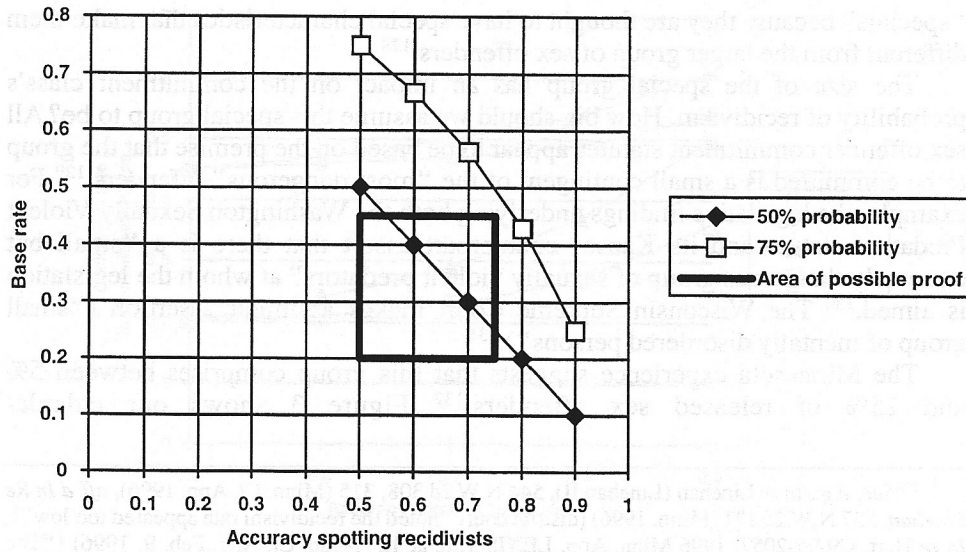


Figure 2. Condition for achieving 50% and 75% probability of violent sexual recidivism in the commitment class.

Model 2 suggests a slightly different understanding for the process of prediction in sex offender commitment cases.<sup>126</sup> In this model, the selection process is aimed not at identifying people who “will” recidivate, but rather those who belong to a subgroup of sex offenders with a probability of reoffense that exceeds a given level. This is the method of prediction recommended by Grisso and Appelbaum.<sup>127</sup> For example, a trier of fact may be seeking to identify those individuals who have a likelihood of reoffense of at least 75%, out of a group with a substantially lower probability of reoffending. We refer to the target group as “specials” because they are thought to have special characteristics that make them different from the larger group of sex offenders.<sup>128</sup>

The size of the special group has an impact on the commitment class’s probability of recidivism. How big should we assume this special group to be? All sex offender commitment statutes appear to be based on the premise that the group to be committed is a small contingent of the “most dangerous” offenders.<sup>129</sup> For example, the legislative findings underlying both the Washington Sexually Violent Predators statute and its Kansas counterpart assert that there is a “small but extremely dangerous group of sexually violent predators” at whom the legislation is aimed.<sup>130</sup> The Wisconsin Supreme Court makes a similar assertion (“small group of mentally disordered persons”).<sup>131</sup>

The Minnesota experience suggests that this group comprises between 5% and 15% of released sex offenders.<sup>132</sup> Figure 3 shows our calculations<sup>133</sup> for the probability of recidivism in the commitment class, using Model 2 and reasonable bracketing assumptions. Here, again, we assume that sensitivity equals specificity in the selection

process. Each line shows the resulting probability of recidivism for a given base rate and special group. For example, the bottom-most line assumes a base rate of recidivism in the prison-release class of 20%, and a special group that is 5% of the prison-release class. The figure assumes that the recidivism rate in the special group is 75%, a number that corresponds to the terminology (highly likely) in use by the courts to describe the group. As can be seen from Figure 3, a “good” selection process (with an accuracy of 70%) will produce a commitment class with a probability of recidivism in the range from 23% to 50%. A commitment class with a probability of recidivism of 75% is unattainable, even with a near perfect accuracy of 90%.<sup>134</sup>

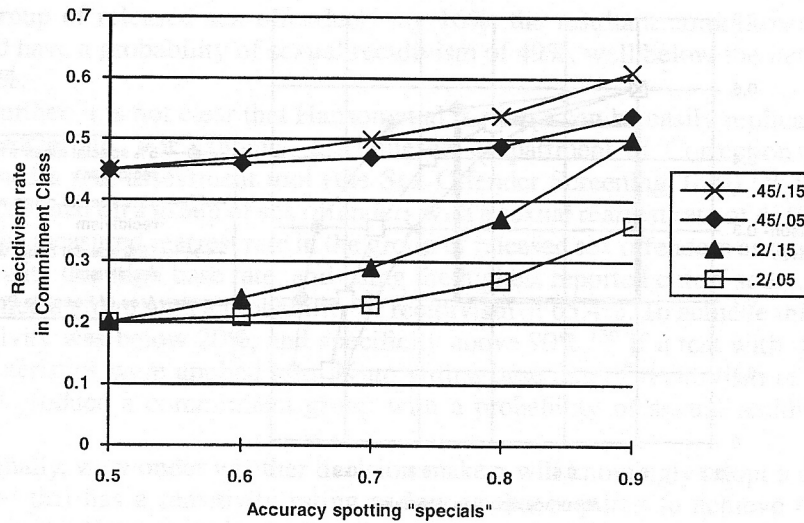


Figure 3. Probability of recidivism in commitment class by base rate of prison release group and size of special group, assuming base rate of sexual violence in special group of 75%.

Figure 4 shows the conditions needed to obtain a commitment class with a 50% probability of recidivism. The figure shows three curves representing various combinations of size of special group (5% or 15% of prison-release class) and probability of recidivism in the special group (75% or 90%). The top line represents the assumptions most in line with the facts in Minnesota: a special group of 5% of released sex offenders, who are “highly likely,” 75%, to reoffend. The bottom-most curve represents much more optimistic assumptions: “specials” make up 15% of released sex offenders and are almost certain to reoffend (90%). The middle curve represents a larger group of “specials” than is assumed in Minnesota but makes a moderate assumption that the likelihood of reoffense among the special group is “highly likely” rather than almost certain.

The heavy rectangle shows the area of possible proof, based on the same bracketing assumptions as used in Figure 2. Note that the top-most curve—the most likely to represent reality—falls entirely outside of the box. This suggests that Minnesota courts never attain a 50% probability of recidivism standard of commitment. Even on assumptions about the special group that appear to be highly optimistic, 50% probability in the commitment class will occur only on the most optimistic assumptions about base rates and prediction accuracy.

As we have noted, our calculations above assume that sensitivity equals specificity in

the selection process. That is, we have assumed that the accuracy in identifying recidivists (sensitivity) is the same as the accuracy in identifying nonrecidivists (specificity). Some prediction schemes can be calibrated in several ways, producing various relationships between sensitivity and specificity. For example, Hanson et al. used a “risk checklist” to assign a score from 0 to 5 for each child molester in the study group.<sup>135</sup> Their study showed that 77% of those who scored 5 were reconvicted of a sexual or other violent crime in the study period. Thus, if a score of 5 on the Hanson checklist is used as a cut-point to predict recidivism for commitment, the resultant commitment group would have a probability of sexual or violent recidivism of 77%. Sensitivity and specificity for this prediction procedure would be vastly unequal. Sensitivity would be 15%, meaning that the commitment process would allow 85% of all recidivists to go free. In contrast, specificity would be a near perfect 97%—almost all nonrecidivists would be correctly identified.

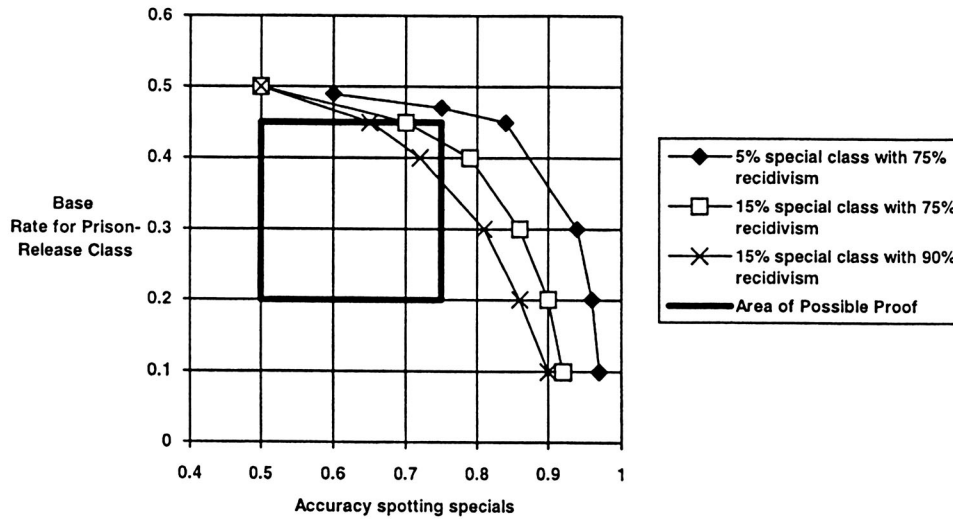


Figure 4. Conditions for 50% probability of sexually violent recidivism in commitment class; “special” classes of .05 and .15.

For a number of reasons, we doubt that Hanson et al.’s results can be applied in the sex offender commitment context. First, their study dealt with sexual and violent recidivism, in a group with a recidivism rate of 41%. Sex offender commitment statutes seek to predict sexual recidivism in a group whose recidivism base rate may be substantially lower.<sup>136</sup> If the same prediction process were to be applied to a group with a base rate of sexual recidivism equal to that measured in the group of released sex offenders, say 16%, the resultant commitment group would have a probability of sexual recidivism of 49%, well below the benchmark of 75%.

Further, it is not clear that Hanson et al.’s results can be easily replicated on a different group. For example, a Minnesota Department of Corrections project designed a risk assessment tool (the Sex Offender Screening Tool).<sup>137</sup> This tool was validated on a group of sex offenders with a sexual rearrest rate of 41%, higher than the measured rearrest rate in the group of released sex offenders as a whole.<sup>138</sup> Even with this high base rate, and using the highest reported cutoff score, the test identified a group with a



probability of recidivism of 65.4%. To achieve this result, sensitivity was below 20%, and specificity above 90%.<sup>139</sup> If a test with the same characteristics were applied to a group with a base rate of recidivism of 16%, it would produce a commitment group with a probability of sexual recidivism of 28%.

Finally, we wonder whether decision makers will knowingly adopt a decision method that has a sensitivity rating as low as that required to achieve the 77% result in the Hanson study. As mentioned above, the Hanson study achieved the 77% result only by addressing a group with a rather high base rate, and by setting the cut-point in a way that achieved very high specificity at the expense of very low sensitivity. Decision makers would need to acknowledge that 85% of all recidivists will be passed over for commitment and would need to insist on a standard of proof that was near perfection (97%) in judging nonrecidivists.

## V. Conclusion

Prediction is a central part of any civil commitment scheme. In sex offender commitments it is particularly important, because the cost of errors in prediction is very high. Sexual violence may result from overly optimistic predictions. This risk of error is at least partly balanced by the fact that overly pessimistic predictions cause unnecessary loss of liberty and expenditure of scarce state resources. Perhaps most importantly, the legitimacy of a system of liberty deprivation depends on a fair and accurate method for determining whose liberty is to be curtailed.

In turning back challenges to sex offender commitment statutes, courts and advocates for the statutes have taken a somewhat paradoxical stance on prediction of violence. On the one hand, they have acknowledged the problematic nature of prediction. On the other, they have claimed that the commitment processes are able to select for commitment a very small, highly dangerous cohort out of the mass of sex offenders released from prison. They have often cited the newer literature on prediction to support these claims. The claim that sex offender commitments are limited to this small group with a high probability of recidivism is central to the legitimacy of sex offender commitments.

Despite the centrality of the claim, no court or legislature has quantified its standard for prediction. Nor have the courts enforced the standard in a vigorous way through appellate review. Developing quantified measures for the standard of commitment is an essential step in assuring that the standard in use is indeed the high standard claimed, and that the standard can be enforced and applied fairly and uniformly in the trial and appellate process.

We propose a method by which courts can quantify their standards for commitment. We set out a road map for judges to follow in deciding whether the evidence has surpassed the standard of commitment. We have suggested several ways in which statistics and actuarial methods ought to be used: not as an automatic decision machine for sex offender commitments, but rather as tools to enable courts to quantify their prediction standards, and thereby hold sex offender commitment schemes to closer account.

In this article, we take no position on where, exactly, the legislatures and courts should set their standards for commitment. This question has been answered, to a large degree, by the courts themselves, who claim to set it at a very high level. Our point is simply that, at present, there is no accountability for this standard. We have proposed several methods by which courts can evaluate quantitatively the prediction testimony that

is offered. This capacity should encourage courts to quantify their standards for commitment, and in that way heighten the accountability and legitimacy of the process.

Our methods make use of actuarial and statistical methods. In the view of many researchers, the use of actuarial tools is necessary to attaining the best possible predictions of future violence.<sup>140</sup> Many courts, however, appear chary of actuarial methods of prediction. These methods treat the subject of commitment as a member of a group rather than as an individual,<sup>141</sup> which appears to be contrary to contemporary American values.<sup>142</sup> As important as these values are, we think that all empirical prediction about individuals is, in the end, based to some extent on membership in a class of persons.<sup>143</sup> For example, courts regularly rely on diagnostic categories to support predictions of future dangerousness, yet diagnoses are distillations of information about other people. Thus, ignoring statistical information may simply cover up, not eliminate, inferences based on group membership.

More to the point, the use of actuarial methods may appear too mechanical and too general, undercutting the ideal that decisions about personal liberty should be individualized, taking into account the unique constellation of facts that make up this person.<sup>144</sup> We recognize the strength in this concern, which is echoed in the literature by those who call for the cautious modification of actuarial results by the consideration of salient, dynamic factors.<sup>145</sup>

Our proposed methods, though they use actuarial and statistical information, do not fall within the sweep of either of these criticisms. The role we propose for statistics enables courts to estimate the probability of recidivism inherent in the prediction testimony offered to them. These estimates apply equally to clinical and actuarial methods of prediction.

This brings us to the last concern about the use of actuarial methods in civil commitment proceedings. It is sometimes said that the use of actuarial methods deprives the judge of his or her role in the adjudication process. By definition, actuarial methods use automatic, formulaic decision methods, and thus leave no room for judges to exercise their "judgment."

Actuarial methods may be a critical piece of the evidence, but the judge must decide whether to use those methods, and whether the prediction evidence has surpassed the standard of commitment. Those decisions, of course, are not actuarial decisions. In the end, judges decide cases; statistics do not.

Our proposal shows how judges can use statistics to make these judgments about the evidence. Used in this way, statistics do not curtail the role of the judge but rather give the judge the tools to evaluate critically and quantitatively the prediction testimony of mental health professionals.<sup>146</sup>

**Appendix**

The mathematical derivation showing that the recidivism rate of the commitment class is a function of accuracy and base rate is as follows.

Table IA  
*Two by Two Contingency Table*

| Prediction | Outcome |            | Totals            |
|------------|---------|------------|-------------------|
|            | Violent | Nonviolent |                   |
| Violent    | a       | b          | a + b             |
| Nonviolent | c       | d          | c + d             |
| Totals     | a + c   | b + d      | a + b + c + d = 1 |

We use the term *accuracy* to mean the number of correct assessments divided by the total number of assessments made in the selection process. This is the measure to which the *Young* court’s quote from Dr. Quinsey refers.<sup>1A</sup> This concept is sometimes referred to in the literature as the “percent correct” assessments.<sup>2A</sup> Referring to Table IA<sup>3A</sup>, accuracy is represented by  $(a + d) / (a + b + c + d)$ , the ratio of correct prediction to all predictions. Because *a*, *b*, *c*, and *d* are expressed as decimal fractions, then  $a + b + c + d = 1$ ; and we can simplify:

$$A = a + d. \tag{1A}$$

The base rate for sexual violence in a given population is the number of individuals who engage in sexual violence, within a given time period, divided by the total number in the group. Referring again to Table IA, the base rate for the population represented by this table would be  $(a + c) / (a + b + c + d)$ . Simplifying:

$$R = a + c. \tag{2A}$$

The probability of recidivism associated with the commitment class depends on the base rate for violence in the group from which the commitment class is selected, that is, the “prison-release class.” Sex offenders are thought to be heterogeneous with respect to recidivism rates. Thus, it is possible to divide the prison-release class into subgroups for which distinct base rates of violence might be determined.<sup>4A</sup> In general, prediction of violence is enhanced by higher base rates of violence in the group from which the selection is made. In our estimation procedure, we take this into account by using a range of base rates in our calculations.

The probability of recidivism in the commitment class is

$$P = \frac{a}{a + b}. \tag{3A}$$

Substituting, we see that the probability of recidivism in the commitment class is a

function of accuracy<sup>5A</sup> and base rate.

$$P = \frac{A \cdot R}{A \cdot R + (1 - R)(1 - A)} \quad (4A)$$

Thus, if we know the accuracy of the selection process, and the base rate of recidivism in the prison-release class, then we can calculate probability of recidivism in the commitment class.

The calculations for Model 2, referred to in the text, are as follows:

- $R$  = overall recidivism rate for the prison-release group;
- $R_S$  = recidivism rate for “special” (high-risk) subset of cases;
- $R_N$  = recidivism rate for nonspecial subset;
- $P_S$  = proportion of “specials” in prison-release group;
- $P_N$  = proportion of non specials in prison-release group ( $= 1 - P_S$ );
- $p_S$  = valid (+) rate = proportion of “specials” identified as such (accuracy identifying “specials”);
- $p_N$  = false (+) rate = proportion of non specials wrongly identified as special;
- $p_V$  = proportion of total group correctly called recidivator (“valids”) (i.e., committed recidivators);
- $p_F$  = proportion of total group incorrectly called recidivator (“falses”) (i.e., committed nonrecidivators); and
- $P_C$  = probability of recidivism for the commitment class = committed recidivators expressed as a proportion of the commitment class.

The proportion of recidivators in the entire prison-release group is the sum of the proportions of recidivators in the special group and in the nonspecial group.

$$R = P_S R_S + P_N R_N \quad (5A)$$

Solving for  $R_N$ ,

$$R_N = \frac{R - P_S R_S}{P_N} \quad (6A)$$

$$p_V = P_S p_S R_S + P_N p_N R_N \quad (7A)$$

The proportion of the total group correctly called recidivator is made up of recidivators called so who are specials, plus recidivators called so who are nonspecials but wrongly called specials (i.e., some nonspecials do recidivate). Under Model 2, the courts never commit a person unless the person is identified as a “special.” Therefore, no one is called a recidivator who is not also identified as a special.

Assume optimistically that valid (+) rate = valid (–) rate so

$$p_N = (1 - P_S) \quad \text{and} \quad p_S = (1 - p_N) \quad (8A)$$

Substituting Equations 6A and 8A into equation 7A, we can express  $p_V$  as a function of the proportion of specials, the accuracy in identifying specials, the recidivism rate of the specials, and the overall recidivism rate.

$$p_V = P_S p_S R_S + (1 - P_S)(1 - p_S) \frac{R - P_S R_S}{1 - P_S} \quad (9A)$$

$$p_F = P_S p_S (1 - R_S) + P_N p_N (1 - R_N) \quad (10A)$$

The proportion of the total group incorrectly called recidivator is made up of non-recidivators wrongly called recidivators who are specials and called so, plus nonrecidivators wrongly called recidivators who are nonspecials wrongly called specials.

Substituting, we can express  $p_F$  as a function of the proportion of specials, the accuracy in identifying specials, the recidivism rate of the specials, and the overall recidivism rate.

$$p_F = P_S p_S (1 - R_S) + (1 - P_S)(1 - p_S) \left( 1 - \frac{R - P_S R_S}{1 - P_N} \right) \quad (11A)$$

The probability of recidivism associated with the commitment class is the ratio of committed recidivators to all committed persons:

$$P_C = \frac{p_V}{p_V + p_F} \quad (12A)$$

Using Equations 9A and 11A and substituting in Equation 12A, we can calculate the proportion of the commitment class that will be recidivators, as a function of the proportion of specials, the accuracy in identifying specials, the recidivism rate of the specials, and the overall recidivism rate.

## Footnotes

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- <sup>1</sup> See, e.g., Alexander D. Brooks, *The Constitutionality and Morality of Civilly Committing Violent Sexual Predators*, 15 U. PUGET SOUND L. REV. 709, 710 (1992); John Q. LaFond, *Washington's Sexually Violent Predator Law: A Deliberate Misuse of the Therapeutic State for Social Control*, 15 U. PUGET SOUND L. REV. 655, 661 (1992).
- <sup>2</sup> SAMUEL J. BRAKEL ET AL., *THE MENTALLY DISABLED AND THE LAW* 24-25 (3d ed. 1985).
- <sup>3</sup> See, e.g., ARIZ. REV. STAT. ANN. § 13-4601 (5) (West 1996); CAL. WELFARE & INST. CODE § 6600 (a) (West 1996); IOWA CODE ANN. § 709C.3 (West Supp. 1996); KAN. STAT. ANN. § IOWA CODE ANN. IOWA CODE ANN.59-29a02 (a) (1994); MINN. STAT. ANN. § 253B.02 subd. 18 (a) (West 1992 & Supp. 1996); N.J. STAT. ANN. § 30:4-82.4 (a) (West Supp. 1996); WASH. REV. CODE ANN. § 71.09.020 (1) (West 1996); WIS. STAT. ANN. § 980.01 (7) (West Supp. 1996).
- <sup>4</sup> See, e.g., ARIZ. REV. STAT. ANN. § 13-4601 (5) (West 1996); CAL. WELFARE & INST. CODE § 6600 (a) (West 1996); IOWA CODE ANN. § 709C.1 (West Supp. 1996); KAN. STAT. ANN. § 59-29a02 (a) (1994); MINN. STAT. ANN. § 253B.02, subds. 7a, 18b (West 1992 & Supp. 1996); N.J. STAT. ANN. § 30:4-82.4 (b) (West Supp. 1996); WASH. REV. CODE ANN. § 71.09.020 (1) (West 1992 & Supp. 1996); WIS. STAT. ANN. § 980.01 (7) (West 1996).
- <sup>5</sup> See, e.g., ARIZ. REV. STAT. ANN. § 13-4601 (5) (West 1996); CAL. WELFARE & INST. CODE § 6600 (a) (West 1996); IOWA CODE ANN. § 709C.1 (West Supp. 1996); KAN. STAT. ANN. § 59-29a02 (a) (1994); MINN. STAT. ANN. § 253B.02, subds. 7a, 18a, 18b; § 253B.185 (West 1992 & Supp. 1996); N.J. STAT. ANN. § 30:4-82.4 (b) (West Supp. 1996); WASH. REV. CODE ANN. § 71.09.020 (1) (West 1992 & Supp. 1996); WIS. STAT. ANN. § 980.01 (7) (West 1996).
- <sup>6</sup> See generally Thomas Grisso & Paul S. Appelbaum, *Is it Unethical to Offer Predictions of Future Violence?*, 16 L. & HUM. BEHAV. 621, 628 (1992) (discussing professional ethics of probabilistic statements of an individual's risk of harmful behavior); Stephen D. Hart, Christopher D. Webster, and Robert J. Menzies, Research Note, *A Note on Portraying the Accuracy of Violence Predictions*, 17 LAW & HUM. BEHAV. 695, 696 (1993) ("In the context of psycholegal assessments, unwillingness to qualify one's confidence in violence predictions or failure to make probabilistic statements regarding the likelihood of future violence is, at best, poor practice; at worst, it is simply unethical").
- <sup>7</sup> See *Addington v. Texas*, 441 U.S. 418, 432-33 (1978) (rejecting a civil commitment scheme in which the risk of erroneous commitment was shared equally by the state and the individual).
- <sup>8</sup> See *Cooper v. Oklahoma*, 116 S. Ct. 1373, 1383 (1996), *Addington v. Texas*, 441 U.S. 418, 426-27 (1978); *O'Connor v. Donaldson*, 422 U.S. 563, 574 (1975).
- <sup>9</sup> *In re Young*, 857 P.2d 989 (Wash. 1993); *State v. Post*, 541 N.W.2d 115 (Wis. 1995), *petition for cert. filed* (U.S. Mar. 7, 1996); *State v. Carpenter*, 541 N.W.2d 105 (Wis. 1995), *petition for cert. filed* (U.S. Mar. 7, 1996); Alexander D. Brooks, *The Incapacitation by Civil Commitment of Pathologically Violent Sex Offenders*, in BRUCE SALES & DANIEL SHUMAN, *LAW, MENTAL HEALTH, AND MENTAL DISORDER* 385, 386 (1996) (sex offender commitment legislation applies to a " 'small but dangerous group' "); John L. Kirwin, *Civil Commitment of Sexual Predators: Statutory and Case Law Developments*, THE HENNEPIN LAWYER, Sept.–Oct. 1995, at 22 (1995).
- <sup>10</sup> See, for example, the LaFond–Brooks debate in the University of Puget Sound Law Review, composed of the articles cited *supra* note 1.
- <sup>11</sup> See Eric S. Janus, *Preventing Sexual Violence: Setting Principled Constitutional Boundaries on Sex Offender Commitments*, 72 IND. L. J. 157, 197-206 (Winter 1996). Although all civil commitments involve the deprivation of liberty, the stakes in sex offender commitments are

arguably higher than in civil commitments involving nonforensic patients. *Id.* This is because sex offender commitments are longer than standard civil commitments, and that erroneous sex offender commitments are more difficult to correct than erroneous standard civil commitments.

- <sup>12</sup> See, e.g., PROGRAM EVALUATION DIVISION, OFFICE OF THE LEGISLATIVE AUDITOR (MINNESOTA), PSYCHOPATHIC PERSONALITY COMMITMENT LAW 1 (Feb. 1994) (total of \$28.55 million appropriated for construction and improvement of facilities designated for psychopathic personality commitments); Conrad deFiebre, *Psychopathic Sex Offenders Get New Home*, MINNEAPOLIS STAR-TRIB., Nov. 5, 1995, at 1B (cost of treatment exceeds \$100,000 per year per inmate, more than four times the cost of imprisonment).
- <sup>13</sup> See generally Bruce J. Winick, *The Right to Refuse Mental Health Treatment: A First Amendment Perspective*, 44 U. MIAMI L. REV. 1, 64-90 (1989) (discussing level of intrusiveness of various forms of treatment).
- <sup>14</sup> See Brooks, *supra* note 9, at 384-85.
- <sup>15</sup> See John Pratt, *Governing the Dangerous: An Historical Overview of Dangerous Offender Legislation*, 5 SOC. AND LEGAL STUD. 21, 33 (1996) (describing contemporary concern about prediction as being directed at preserving “precious and exclusive penal resources of the state”).
- <sup>16</sup> See, e.g., *In re Blodgett*, 510 N.W.2d 910, 917 (Minn. 1994) (noting “the opinions of mental health experts are sufficiently reliable to support commitment proceedings.”), *cert. denied*, 115 S. Ct. 146 (1994); *In re Young*, 857 P.2d 989, 1017 (Wash. 1993) (acknowledging that “prediction of dangerousness has its attendant problems” but holding prediction testimony “sufficiently accurate and reliable” to be admissible.); *State v. Post*, 541 N.W.2d 115, (Wis. 1995) (“predictions of future dangerousness may be difficult, they are still an attainable, in fact essential, part of our judicial process.”), *petition for cert. filed* (U.S. Mar. 7, 1996); *State v. Carpenter*, 541 N.W.2d 105 (Wis. 1995), *petition for cert. filed* (U.S. Mar. 7, 1996).
- <sup>17</sup> See *Kansas v. Hendricks*, 912 P.2d 129 (Kan. 1996), *rev’d*, 117 S. Ct. 2072 (1997).
- <sup>18</sup> See *Young v. Weston*, 898 F. Supp. 744 (W.D. Wash. Aug. 25, 1995).
- <sup>19</sup> See *Young v. Weston*, 898 F. Supp. 744, 751 (W.D. Wash. Aug. 25, 1995) (dangerousness alone insufficient); *Kansas v. Hendricks*, 912 P.2d 129, 137 (Kan. 1996) (finding act fails without requirement that person committed suffers from mental illness), *rev’d* 117 S. Ct. 2072 (1997).
- <sup>20</sup> See *Schall v. Martin*, 467 U.S. 253, 268 n. 18 (1984) (citing *Rummel v. Estelle*, 445 U.S. 263, 275 (1980) (“the presence or absence of violence does not always affect the strength of society’s interest in deterring a particular crime.”); *Barefoot v. Estelle*, 463 U.S. 880, 897 (1983) (though difficult, predictions of dangerousness are essential part of judicial process); *Jurek v. Texas*, 428 U.S. 262 (1976) (medical testimony on future dangerousness admissible at penalty phase of capital prosecution); *State v. Prior*, 799 P.2d 244, 249 (Wash. 1990) (holding exceptional sentences are warranted when offender has significant criminal history and is not amenable to treatment); *In re Harris*, 564 P.2d 109, 114 (Wash. 1982) (allowing 72-hour evaluation and treatment by summons on finding of probable dangerousness to self).
- <sup>21</sup> Each of the three state supreme courts that have upheld sex offender commitment schemes has construed the underlying statutes as requiring relatively high levels of probability of future violence. See *In re Linehan* (Linehan II), 544 N.W.2d 308, 313 (Minn. Ct. App. 1996), *aff’d*, 557 N.W.2d 171 (Minn. 1996); *State ex rel. Pearson v. Probate Court of Ramsey County*, 287 N.W. 297, 303 (Minn. 1939); *In re Young*, 857 P.2d 989 (Wash. 1993). See also *infra* notes 40–45 and accompanying text.
- <sup>22</sup> See *In re Young*, 857 P.2d 989 (Wash. 1993) (applying *Frye* test to prediction testimony); compare *Daubert v. Merrell Dow Pharmaceuticals*, 509 U.S. 579 (1993) (placing limits on the introduction of “scientific” testimony). For examples of cases discussing the application

of *Daubert* to expert psychological testimony, see generally *Gier v. Educational Service Unit* No. 16, 66 F.3d 940 (8th Cir. 1995); *United States v. Powers*, 59 F.3d 1460 (4th Cir. 1995); *United States v. Evanoff*, 10 F.3d 559 (8th Cir. 1993). For a thorough discussion of *Daubert* and its progeny, see generally David L. Faigman, *The Evidentiary Status of Social Science Under Daubert: Is it "Scientific," "Technical," or "Other" Knowledge?*, 1 PSYCHOLOGY, PUBLIC POLICY, AND LAW 960 (1995) (concluding that while testimony about eyewitness identification is unaffected, other types of expert testimony is more problematic).

- <sup>23</sup> See AMERICAN PSYCHOLOGICAL ASSOCIATION, ETHICAL PRINCIPLES OF PSYCHOLOGISTS AND CODE OF CONDUCT 2.04 (b), 7.04 (effective December 1, 1992) ("Psychologists recognize limits to the certainty with which diagnoses, judgments, or predictions can be made about individuals." "Whenever necessary to avoid misleading, psychologists acknowledge the limits of their data or conclusions.").

The Association for the Treatment of Sexual Abusers (ATSA) also encourages psychologists to proceed with caution. See ASSOCIATION FOR THE TREATMENT OF SEXUAL ABUSERS, ATSA PRACTITIONER'S HANDBOOK 2, 20 (1993). Specifically, psychologists are to "[a]void drawing conclusions or rendering opinions that exceed the present level of knowledge in the field or the expertise of the evaluator." *Id.* ATSA further teaches that psychologists must "[b]e very cautious in offering predictions of criminal behavior for use in imprisoning or releasing individuals." *Id.* In furtherance of its teachings, ATSA instructs that if a prediction is given on the basis of a thorough evaluation, it should specify clearly "the acts being predicted; the estimated probability that these acts will occur during a given period of time; and the facts on which these predictive judgments are based." *Id.* See also Committee on Ethical Guidelines for Forensic Psychologists, *Specialty Guidelines for Forensic Psychologists*, 15 LAW & HUM. BEHAV. 655, 665 (1991) (requiring forensic psychologists to maintain current knowledge of scientific developments so they "are prepared to explain the relationship between their expert testimony and the legal issues and facts of an instant case."); Grisso & Appelbaum, *supra* note 6; Thomas R. Litwack, *On the Ethics of Dangerousness Assessments*, 17 LAW & HUM. BEHAV. 479 (1993) (criticizing Grisso and Appelbaum).

- <sup>24</sup> See *Foucha v. Louisiana*, 504 U.S. 71 (1992); *cf.* *Jones v. United States*, 463 U.S. 354 (1983); compare *In re Rickmyer*, 519 N.W.2d 188, 190 (Minn. 1994) (excluding nonviolent pedophile from commitment) with *In re Biegenowski*, 520 N.W.2d 525, 527 (Minn. Ct. App. 1994) (committing nonviolent pedophile), and *In re Clements*, 440 N.W.2d 133, 136 (Minn. Ct. App. 1989) (committing nonviolent exhibitionist).

- <sup>25</sup> Marie A. Bochnewich, Comment, *Prediction of Dangerousness and Washington's Sexually Violent Predator Statute*, 29 CAL. W. L. REV. 277, 298 (1992), citing ALEXANDER D. BROOKS, LAW, PSYCHIATRY AND THE MENTAL HEALTH SYSTEM (1974).

- <sup>26</sup> See discussion *infra* notes 39 to 45.

- <sup>27</sup> See, e.g., MINN. STAT. ANN. § 253B.02, subd. 7b (West Supp. 1996); WASH. REV. CODE ANN. § 71.09.020 (6) (West Supp. 1996); WIS. STAT. ANN. § 980.01 (6) (West Supp. 1996).

- <sup>28</sup> See *In re Rickmyer*, 519 N.W.2d 188, 190 (Minn. 1994); *In re Rodriguez*, 506 N.W.2d 660, 663 (Minn. Ct. App. 1993); *In re Stilinovich*, 479 N.W.2d 731, 735 (Minn. Ct. App. 1992).

- <sup>29</sup> See *In re Hince*, C9-94-1366, 1994 Minn. App. LEXIS 1142 (Minn. Ct. App. Nov. 15, 1994).

- <sup>30</sup> See Bochnewich, *supra* note 25, at 298-301 (1992) (discussing "imminence").

- <sup>31</sup> See *In re Young*, 857 P.2d 989, 1008 (Wash. 1993).

- <sup>32</sup> See *State v. Post*, 541 N.W.2d 115, 129 (Wis. 1995), *petition for cert. filed* (U.S. Mar. 7, 1996) (rejecting recency requirement); *In re Linehan* (Linehan II), 544 N.W.2d 308, 313 (Minn. Ct. App. 1996), *aff'd*, 557 N.W.2d 171 (Minn. 1996) (rejecting both retrospective and prospective proximity requirements).



- <sup>33</sup> See Douglas Mossman, *Dangerousness Decisions: An Essay on the Mathematics of Clinical Violence Prediction and Involuntary Hospitalization*, 2 U. CHI. L. SCH. ROUNDTABLE 95 (1995); cf. *Addington v. Texas*, 441 U.S. 418 (1978).
- <sup>34</sup> Thanks to Roy Pardee for this point. In theory, the decision in sex offender commitment cases need not be dichotomous. The law could provide for a range of commitment dispositions corresponding to the probability–magnitude product. Decisions in other contexts, such as sentencing or release decisions in criminal cases, are often of this sort. In practice, the sex offender commitment decision appears to be highly a dichotomized one in which individuals whose “dangerousness” is judged above a threshold are committed to highly secure, lengthy confinement, whereas those falling below the threshold are released to the community. However, it is important to note that most candidates for sex offender commitments are individuals who are about to be released from prison terms. In many cases, the condition for release from prison includes a period of intense supervision in the community. Thus, the dichotomous choice in sex offender commitments is often between a supervised placement in the community and confinement in a secure treatment facility.
- <sup>35</sup> See *infra* note 49 and accompanying text for a discussion of the “standard of commitment.”
- <sup>36</sup> Some commentators would assert that the decisions referred to in the text are not erroneous. See Bochnewich, *supra* note 25, at 296 (1992) (“prediction of dangerousness based on membership in a group for which a consistent, verified pattern of conduct has been proven, is a statement of a *condition*. That condition is membership in a defined group with certain attributes, and not the prediction of a *result* of future violent acts in each individual case.”) Michael Corrado, *Punishment and the Wild Beast of Prey: The Problem of Preventive Detention*, 86 J. CRIM. L. & CRIMINOLOGY 778, 792 (1996) (“[T]he advocate of preventive detention may argue that since such persons are to be detained because of the risk they create, it is wrong to speak of persons who are dangerous but would not in fact commit a crime as wrongly detained. ... Preventive detention incapacitates persons who create a threat of harm. For each of the persons detained, there is a one hundred percent chance that person presents a *risk* of harm.”) Barbara D. Underwood, *Law and the Crystal Ball: Predicting Behavior with Statistical Inference and Individualized Judgment*, 88 YALE L. J. 1408, 1414, n. 13 (1979) (“Thus the proponents of the requirement of proof beyond a reasonable doubt in civil commitment proceedings maintain that it is quite feasible to determine beyond a reasonable doubt that a person is mentally ill and *likely* to injure himself or others; that proposition can be true even if the person in fact would not injure anyone.”). These writers assert that the justification for confinement is the “risk” posed by the individual, not the future actualization of the risk. Because our focus here is on quantifying the actual standards courts use in assessing risk, our method treats outcomes that are contrary to the risk as errors.
- <sup>37</sup> This table is based on Stephen D. Hart, et al., *supra* note 6, at 696.
- <sup>38</sup> The precise location of the probability of harm standard may be a function of the values decision makers attribute to avoiding the two types of errors (the disutility functions of the decision makers). In *Addington*, for example, the Supreme Court suggested that it would be unconstitutional for the state to ask the individual to share the risk of error equally with the public in standard civil commitment cases. 441 U.S. 418, 426 (1971). Sex offender commitment cases may evoke different disutility functions. For example, decision makers might worry more about avoiding possible sexual violence than about extending the confinement of a convicted sex offender.
- <sup>39</sup> See Kirwin, *supra* note 9, at 25 (“most dangerous”); Brooks, *supra* note 9, at 391 (sex offender commitment laws aimed at those “whose likelihood of reoffending is ‘extremely high’ ” (quoting *In re Young*, 857 P.2d 989, 1003) (Wash. 1993); John Pratt, *Dangerousness, Risk and Technologies of Power*, 28 AUSTRALIAN AND NEW ZEALAND J. CRIMINOLOGY 3 (1995)

(selecting a small number of dangerous individuals thought to minimize ethical problems of preventive detention).

- <sup>40</sup> See MINN. STAT. ANN. § 253B.02, subds. 18a, 18b (West Supp. 1996); State *ex rel.* Pearson v. Probate Court of Ramsey County, 287 N.W. 297, 303 (Minn. 1939).
- <sup>41</sup> See *In Re the Matter of Linehan*, 557 N.W.2d 171, 181 (Minn. 1996).
- <sup>42</sup> See WASH. REV. CODE 71.09.020(1) (1995).
- <sup>43</sup> See *In re Young*, 857 P.2d 989, 1008 (Wash. 1993).
- <sup>44</sup> See WIS. STAT. § 980.01 (1996); State v. Post, 541 N.W.2d 115, 118 (Wis. 1995), *petition for cert. filed*, (U.S. Mar. 7, 1996).
- <sup>45</sup> State v. Post, 541 N.W.2d 115, 118 (Wis. 1995), *petition for cert. filed* (U.S. Mar. 7, 1996).
- <sup>46</sup> *Young*, 857 P.2d at 1003; Katherine P. Blakey, Note, *The Indefinite Civil Commitment of Dangerous Sex Offenders is an Appropriate Legal Compromise Between “Mad” and “Bad”—A Study of Minnesota’s Sexual Psychopathic Personality Statute*, 10 NOTRE DAME J. L. ETHICS & PUB. POL’Y 227, 268 n.185 (1996) (“[T]he Supreme Court of Washington found that the target population of its sexually violent predator law were usually repeat offenders and displayed rates of recidivism as high as 80%.” [citing *Young*, 857 P.2d at 1003–04]). The court’s mistake—treating “the accuracy of the witness as equal to the probability of a correct identification”—is a commonly occurring heuristic bias. See Michael J. Saks & Robert F. Kidd, *Human Information Processing and Adjudication: Trial by Heuristics*, 15 LAW & SOC’Y REV. 123, 130 (1980–81).
- <sup>47</sup> See Brooks, *supra* note 9, at 391 (asserting that the behavior of “violent sex offenders ... tends to be substantially more predictable than that of psychotic persons” and citing the *Young* court’s citation of Quinsey’s 80% accuracy figure); DR. VERNON QUINSEY, REVIEW OF THE WASHINGTON STATE SPECIAL COMMITMENT CENTER PROGRAM FOR SEXUALLY VIOLENT PREDATORS, at 9 (appended to WASH. STATE INST. FOR PUB. POLICY, REVIEW OF SEXUAL PREDATOR PROGRAM: COMMUNITY PROTECTION RESEARCH PROJECT [Feb. 1992]). In its Amicus Brief to the United States Supreme Court in *Kansas v. Hendricks*, the Association for the Treatment of Sexual Abusers claimed that “sex offender specialists are able to ... identify a small subset of sex offenders who have specific paraphiliac disorders and who are at highest risk to re-offend. Amicus Brief of Ass’n for the Treatment of Sexual Abusers at 9, *Kansas v. Hendricks*, 912 P.2d 129 (Kan. 1996), *cert. granted*, 64 U.S.L.W. 3837 (U.S. 1996) (No. 73039).
- <sup>48</sup> See Brooks, *supra* note 9; Thomas R. Litwack et al., *The Assessment of Dangerousness and Predictions of Violence: Recent Research and Future Prospects*, 64 PSYCHIATRIC Q. 245, 247 (1993).
- <sup>49</sup> See John Monahan & David Wexler, *A Definite Maybe: Proof and Probability in Civil Commitment*, 2 LAW & HUM. BEHAV. 37 (1978).
- <sup>50</sup> Monahan & Wexler, *infra* note 51, at 41.
- <sup>51</sup> Monahan & Wexler, *supra* note 49, at 38; PAUL E. MEEHL, CLINICAL VERSUS STATISTICAL PREDICTION: A THEORETICAL ANALYSIS AND A REVIEW OF THE EVIDENCE 19–23 (2d prtg., Jason Aronson 1996) (empirical prediction rests on inference from membership in a class); Rudolf Carnap, *The Two Concepts of Probability*, 5 PHIL. & PHENOMENOLOGICAL RES. 513, 522 (1945) (defining one type of probability as “relative frequency”); Norval Morris, *Keynote Address: Predators and Politics*, 15 U. PUGET SOUND L. REV. 517, 522 (predictions of human behavior can be given meaning, “but only if expressed in terms of some base expectancy rate. That is to say, some precise statement as to the proportion of this group that will be involved in violence.”); *cf.* IAN HACKING, THE EMERGENCE OF PROBABILITY 54 (1975) (alluding to a dispute among philosophers about whether probability as “propensity” can ever “be sensibly applied to a single case or not”).
- <sup>52</sup> See MEEHL, *supra* note 51, at 22.

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- <sup>53</sup> Some writers refer to this figure as the “percent true positive” predictions. *See, e.g.*, Hart et al., *supra* note 6, at 697 (defining “percent false positive”).
- <sup>54</sup> Monahan & Wexler, *supra* note 51, at 41.
- <sup>55</sup> *See* HACKING, *supra* note 51, at 12.
- <sup>56</sup> *See* Addington v. Texas, 441 U.S. 418 (1978); *cf.* Carnap, *supra* note 51, at 521–522. Carnap defines two types of “probability.” Probability<sub>1</sub> expresses “degree of confirmation,” while Probability<sub>2</sub> expresses “relative frequency.” Probability<sub>2</sub> is “factual and empirical, it says something about the facts of nature.” Probability<sub>1</sub>, on the other hand, expresses the degree to which certain evidence “confirms” a particular conclusion. *See* Carnap, *supra* note 51, at 515. Hacking writes about the history of the “duality” of probability: “It has to do with stable frequencies and with degrees of belief.” *Id.* at 10. He refers to the former as “aleatory” probability, and the latter as “epistemological” probability. *Id.* *See also*, MEEHL, *supra* note 51, at 45 (discussing the meaning of probability in a “determined” world). Compare this with Hacking’s discussion of “propensity, tendency, or disposition,” qualities that are in the world and produce probabilistic behaviors. HACKING, *supra* note 51, at 54. Hacking alludes to the lack of consensus about whether such concepts can be sensibly applied to individual cases. *Id.*
- <sup>57</sup> *See* Vernon L. Quinsey et al., *Predicting Sexual Offenses*, in *ASSESSING DANGEROUSNESS: VIOLENCE BY SEXUAL OFFENDERS, BATTERERS AND CHILD ABUSERS* 114 (Jacquelyn C. Campbell ed. 1995).
- <sup>58</sup> *See, e.g.*, *In re Young*, 857 P.2d 989 (Wash. 1993); Brooks, *supra* note 9, at 392 (both citing Quinsey’s estimate of attainable accuracy).
- <sup>59</sup> Some writers have made the related mistake of placing Quinsey’s 80% figure in the “standard of commitment” category. *See* Blakey, *supra* note 46, who mistakenly translates Quinsey’s statement about “80% accuracy” of prediction into the statement that the “target population of [Washington state’s] sexually violent predator law ... displayed rates of recidivism as high as 80%.” *Id.* at 268 n. 185. Blakey makes the mistake of assuming that an identification process that is “accurate” 80% of the time produces a commitment group that is 80% recidivists. This would be true only if the base rate for recidivism in the group from which the selection is made is at least 50%. If it is less than 50%, the commitment group will be less than 80% recidivist. To understand this, suppose the 80%-accurate expert judged a group of 100. Because she makes errors 20% of the time, the expert will incorrectly call “recidivist” on 20% of the nonrecidivist group. This group is larger than half, so the false alarm group will be at least 10 people. She will identify 80% of the recidivists. Because this group is less than half, the correctly identified recidivists will be fewer than 40. The ratio of correct to incorrect calls of recidivism will be less than 40:10. In other words, the recidivism rate for the commitment group (persons who are identified by the expert as recidivists, whether correctly or incorrectly) will be less than 80%. *See* discussion below in Part IV.
- <sup>60</sup> This multiplication tells us that 60% of the special subgroup would be correctly identified as recidivists. But the percentage of recidivists in the commitment group has a different denominator—it includes not only those who are correctly, but also those who are incorrectly identified as members of the special subgroup. The 60% figure ignores these erroneous commitments.
- <sup>61</sup> *See infra* Figure 3.
- <sup>62</sup> These percentages assume that G’s testimony is true. That is, the percentages are not discounted to reflect the possibility that G might be mistaken in her testimony about 80% accuracy and 75% recidivism.
- <sup>63</sup> *See* Memorandum concerning sex offender commitments from John Kirwin, Ass’t Attorney General, State of Minnesota, to Eric S. Janus, Professor of Law, William Mitchell College of Law (Feb. 8, 1996) [hereinafter Kirwin Memorandum] (on file with Eric S. Janus). Of this

group, DHS reports that appellate courts have reversed five commitments. Also, 15 of the group had been committed for an “initial” limited period for observation and evaluation at the time of the report.

<sup>64</sup> We have not done a formal survey but base this statement on the following. We have read all appellate cases, and none of those reverse a sex offender commitment on probability grounds. In one appellate case, the court reversed a lower court dismissal. *In re* E.D.F., No. C0-95-1556, 1995 Minn. App. LEXIS 1557 (Minn. Ct. App. Dec. 8, 1995). The trial court had denied a petition for commitment on several grounds. One was that the past conduct had not been proved to be sufficiently harmful. *Id.* at 3. The trial court also found that the prediction of future violence had not been proved. *Id.* It is unclear whether it was the probability, or the magnitude, or both, that the court found wanting. In any event, the decision was reversed and remanded by the court of appeals.

We have informally searched for unreported trial court decisions that were based clearly and explicitly on inadequate proof of probability and have found only a few. We have reviewed 20 sex offender commitment cases that did not result in sex offender commitments and were not appealed. Three of these were dismissed on motion of the state before trial. Of the remaining 17 only a few were dismissed unambiguously on probability grounds. In *In re* Beaulieu, No. P5-96-600035 (D. Minn. May 3, 1996), the trial court found that the likelihood of future sexual harm was too low to commit. In *In re* Schiedler, No. PP/05541, the dismissal was based in part on the court’s finding that the respondent did not present a high risk to sexually molest children. In several other cases, the grounds for the dismissal were ambiguous. In *In re* Joslin, No. P1-3-1678 (D. Minn. 1993), it is not clear from the court’s order whether the basis for dismissal was a failure of the dangerousness proof or of the mental state element or both. In *In re* Greene, No. P8-92-13161 (D. Minn. July 8, 1993), the petition was denied because the court was not persuaded that Greene’s predicted misconduct would be sexual in nature.

<sup>65</sup> See, e.g., *In re* Linehan (Linehan I), 518 N.W.2d 609 (Minn. 1994); *In re* Schweninger, 520 N.W.2d 446 (Minn. Ct. App. 1994); *In re* Mentzos, No. C3-95-2331, 1996 WL 81721 (Minn. Ct. App. Feb. 27, 1996).

<sup>66</sup> See, e.g., *In re* Rickmyer, 519 N.W.2d 188 (Minn. 1994); *In re* Rodriguez, 506 N.W.2d 660 (Minn. Ct. App. 1993); *In re* Stilinovich, 479 N.W.2d 731 (Minn. Ct. App. 1992).

<sup>67</sup> See, e.g., *In re* Hince, C9-94-1366, 1994 Minn. App. LEXIS 1142 (Minn. Ct. App. Nov. 15, 1994).

<sup>68</sup> See generally Stephen J. Huot, *Screening and Referral by the Department of Corrections, in* MINNESOTA INSTITUTE OF LEGAL EDUCATION, *PSYCHOPATHIC PERSONALITIES AND SEXUALLY DANGEROUS PERSONS* (1995).

<sup>69</sup> See MINN. STAT. ANN. § 253B.07, subd. 2 (West 1994). See also *In re* Reeves, C5-91-1589, 1991 Minn. App. LEXIS 1213 (Minn. Ct. App. Dec. 24, 1995) (holding pre-petition screening procedure inapplicable to psychopathic personality commitments).

<sup>70</sup> See MINN. STAT. ANN. § 253B.02, subd. 7 (West 1994).

<sup>71</sup> See, e.g., *In re* Linehan I, 518 N.W.2d 609 (Minn. 1994) (describing mental health professionals’ reports).

<sup>72</sup> See *In re* Buckhalton, 403 N.W.2d 148 (Minn. Ct. App. 1993), *aff’d*, 518 N.W.2d 531 (Minn. 1994). *Buckhalton* is a case in which the experts disagreed about the suitability of commitment. See *id.* at 150.

<sup>73</sup> See *supra* note 5 and accompanying text.

<sup>74</sup> As noted above, *supra* note 64, very few commitment petitions fail because of lack of probability proof.

<sup>75</sup> Grisso & Appelbaum, *supra* note 6, at 623–24.

<sup>76</sup> See WILLIAM L. HAYS, *STATISTICS* (5th ed. 1994).

- <sup>77</sup> Vernon L. Quinsey, *Review of the Washington State Special Commitment Center Program for Sexually Violent Predators*, in COMMUNITY PROTECTION RESEARCH PROJECT, WASHINGTON STATE INSTITUTE FOR PUBLIC POLICY, REVIEW OF SEXUAL PREDATOR PROGRAM app. (1992).
- <sup>78</sup> See sources cited *infra* notes 84 through 88.
- <sup>79</sup> See *supra* notes 69 to 72 and accompanying text.
- <sup>80</sup> MEEHL, *supra* note 51, at 8–9.
- <sup>81</sup> See M. WIERZBICKI, ISSUES IN CLINICAL PSYCHOLOGY: SUBJECTIVE VERSUS OBJECTIVE APPROACHES (1993); Robyn M. Dawes, David Faust & Paul E. Meehl, *Clinical versus Actuarial Judgment*, 243 SCIENCE 1668 (1989); William M. Grove & Paul E. Meehl, *Comparative Efficiency of Formal (Mechanical, Algorithmic) and Informal (Subjective, Impressionistic) Prediction Procedures: The Clinical/Statistical Controversy*, 2 PSYCHOL. PUB. POL'Y & L. 293, 293 (1996); Harris et al., *supra* note 84, at 316 (“As is the case in virtually every decision-making situation that has been examined, statistical prediction has been found to be more accurate than expert clinical judgment.”); Villeneuve & Quinsey, *supra* note 70, at 397 (“The superiority of actuarial over clinical prediction has been repeatedly and almost uniformly demonstrated”).
- <sup>82</sup> Dawes et al. distinguish “clinical” from “actuarial” prediction methods as follows:  
 In the clinical method the decision-maker combines or processes information in his or her head. In the actuarial or statistical method the human judge is eliminated and conclusions rest solely on empirically established relations between data and the condition or event of interest.  
 Robyn M. Dawes et al., *supra*, note 81 at 1668.
- <sup>83</sup> There is an additional reason to treat actuarial prediction methods as setting an upper limit on prediction accuracy. As Hanson and Bussière point out, “The statistical risk procedures, however, should be considered to overestimate predictive accuracy since they have yet to be replicated on other samples.” R. K. Hanson & M. T. Bussière, *Predictors of Sexual Offender Recidivism: A Meta-Analysis*, Monograph of the Solicitor General of Canada, Ministry Secretariat (Cat. No. JS4-1/1996-4E 1996).
- <sup>84</sup> See Grant T. Harris et al., *Violent Recidivism of Mentally Disordered Offenders: The Development of a Statistical Prediction Instrument*, 20 CRIM. JUST. & BEHAV. 315, 329 (1993).
- <sup>85</sup> Vernon L. Quinsey, *The Prediction and Explanation of Criminal Violence*, 18 INT'L J. L. & PSYCHIATRY 117 (1995).
- <sup>86</sup> See, Quinsey, *supra* note 57, at 124.
- <sup>87</sup> David B. Villeneuve & Vernon L. Quinsey, *Predictors of General and Violent Recidivism Among Mentally Disordered Inmates*, 22 CRIM. JUST. & BEHAV. 397 (1995).
- <sup>88</sup> See Vernon L. Quinsey et al., *Actuarial Prediction of Sexual Recidivism*, 10 J. INTERPERSONAL VIOLENCE 85, 97 (1995).
- <sup>89</sup> See Huot, *supra* note 68, at 18.
- <sup>90</sup> See Randy K. Otto, *Prediction of Dangerous Behavior: A Review and Analysis of “Second-Generation” Research*, 5 FORENSIC REP. 103, 120 (1992).
- <sup>91</sup> Robert A. Prentky, Raymond A. Knight, and Austin F. S. Lee, *Risk Factors Associated with Recidivism Among Extrafamilial Child Molesters*, 65 J. CONSULTING & CLINICAL PSYCHOL. 141, 144 (1997).
- <sup>92</sup> Prentky et al., *supra* note 91, at 144.
- <sup>93</sup> See, e.g., *id.* (sensitivity = 62.5, specificity = 79.5).
- <sup>94</sup> Quinsey, *supra* note 85, at 119.
- <sup>95</sup> *Id.*

- <sup>96</sup> See Quinsey, *supra* note 85, at 119 (“Fortunately the unreliability of clinical predictions of dangerousness can be substantially ameliorated by averaging independent appraisals of different clinicians. Increasing the *validity* of these appraisals, however, requires the use of an expert system or actuarial aid.”)
- <sup>97</sup> See Michael L. Perlin, *Pretexts and Mental Disability Law: The Case of Competency*, 47 U. MIAMI L. REV. 625, 675 (1993) (“[C]ourts regularly order involuntary civil commitment when testifying experts merely find it ‘doubtful’ that a patient will self-medicate in the community”).
- <sup>98</sup> See *In re Linehan* (Linehan II), 544 N.W.2d 308, 313 (Minn. Ct. App. 1996), *aff’d*, 557 N.W.2d 171 (Minn. 1996); see also *In re Breland*, No. C1-92-2491, 1993 Minn. App. LEXIS 335, at 6–7 (Minn. Ct. App. Mar. 23, 1993) (rejecting release to parole supervision as a viable “less restrictive alternative” to commitment); *In re Buckhalton*, 503 N.W.2d 148, 150 (Minn. Ct. App. 1993) *aff’d* 518 N. W.2d 531 (Minn. 1994) (rejecting testimony from parole officer that individual is not presently a risk to the public); *In re Stone*, 376 N.W.2d 511 (Minn. Ct. App. 1985) (rejecting placement in community treatment program “because it could not provide sufficient security to prevent appellant from leaving and molesting another child”).
- <sup>99</sup> See Allen J. Beck & Bernard E. Shipley, *U.S. Department of Justice, RECIDIVISM OF PRISONERS RELEASED IN 1983* (1989).
- <sup>100</sup> See *In re Linehan* (Linehan II), 544 N.W.2d 308, 313 (Minn. Ct. App. 1996), *aff’d*, 557 N.W.2d 171 (Minn. 1996).
- <sup>101</sup> See Quinsey et al., *supra* note 57; Lita Furby et al., *Sex Offender Recidivism: A Review*, 105 PSYCHOL. BULL. 3 (1989); R. Karl Hanson et al., *Long-term Recidivism of Child Molesters*, 4 J. CONSULTING & CLINICAL PSYCHOL. 646, 649 (1993).
- <sup>102</sup> The study referenced in the text used a 3-year follow-up period. The risk of recidivism continues beyond that period. See Hanson et al. *supra* note 101, at 649 (risk of reconviction still present 10 years after release). However, in a study of all adult male sex offenders released during a 6-year period, with a sample size of 1,373, Song and Lieb found that the highest sex offense rearrest rates occurred in the first and third years following release. The first 3 years of the follow-up period accounted for 65% of the measured recidivism. See LIN SONG & ROXANNE LIEB, WASH. STATE INST. PUB. POL’Y, WASHINGTON STATE SEX OFFENDERS: OVERVIEW OF RECIDIVISM STUDIES 10, 30 (February 1995).
- <sup>103</sup> The results of the National Crime Victimization Survey data from 1987 to 1991 indicated that 53% of female victims of rape reported the crime to police. See U.S. DEPT. OF JUSTICE, VIOLENCE AGAINST WOMEN: A NATIONAL CRIME VICTIMIZATION SURVEY REPORT 12 Table 23 (1994). The proportion of reports increased to 61% when the crime was completed rather than attempted, 65% where additional physical injuries were sustained by the victim, and 75% where the victim received medical care. *Id.*
- <sup>104</sup> In 1994, approximately 52% of forcible rapes known to police were cleared by arrest. See SOURCEBOOK OF CRIMINAL JUSTICE STATISTICS 1995 425 Table 4.20 (1996). In larger cities, the clearance rate was 59%, whereas in smaller cities the rate was lower. See *id.*
- <sup>105</sup> W. L. Marshall & H. E. Barbaree, *Outcome of Comprehensive Cognitive-Behavioral Treatment Programs*, in HANDBOOK OF SEXUAL ASSAULT: ISSUES, THEORIES & TREATMENT OF THE OFFENDER 378 (William L. Marshall et al. eds. 1990). In an earlier publication, Barbaree and Marshall report this ratio to be 2.7. See Howard E. Barbaree & William L. Marshall, *Deviant Sexual Arousal, Offense History, and Demographic Variables as Predictors of Reoffense Among Child Molesters*, 6 BEHAV. SCI. & L. 267, 272 (1988).
- <sup>106</sup> As of November 1995, 47 states had registration laws, requiring sex offenders to register with local law enforcement officials. See Sarah Glazer, *Punishing Sex Offenders*, 6 CONG. Q. RESEARCHER 27, 38 (1996). Registration laws give police a “head start.” *Id.* at 39. However, as late as 1993, only 24 states had such registration laws. See *id.*

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- <sup>107</sup> See Blakey, *supra* note 51, at 268 n.185 (“[T]he Supreme Court of Washington found that the target population of its sexually violent predator law were usually repeat offenders”) (citing *In re Young*, 857 P.2d 989, 1003-04 [Wash. 1993]).
- <sup>108</sup> See MARIANNE W. ZAWITZ ET AL., U.S. DEP’T OF JUSTICE, HIGHLIGHTS FROM 20 YEARS OF SURVEYING CRIME VICTIMS 31 (1993). Zawitz reports that 53% of all rapes were reported to police. *Id.* Using this figure, the chance of a perpetrator evading a report for one crime is approximately 47%. The chance of evading a report of the crime for two rapes, however, is 22%, and for three rapes is 10%. Thus, the percentage of repeat rapists whose crimes are reported may be in the range of 78% to 90%. When the most serious rape is involved, that which causes additional physical injury, 35% of victims do not report. Thus, the chance of a repeat rapist escaping a report diminishes from 35% after one offense, to 12% after the second, to 4% after the third.
- <sup>109</sup> Barbaree et al., *supra* note 105; Quinsey et al., *supra* note 57, at 125 (20.4% reconviction rate).
- <sup>110</sup> Blakey claims there is a “high rate of recidivism among sex offenders” and supports the claim by citing Washington State Institute for Public Policy prediction that 24% of released sex offenders will be arrested again. Blakey, *supra* note 51, at 268 n.185 (citing Gayle M. B. Hanson, *Experts Vexed at What to Do with Sex Offenders; Authorities Try New Methods for Tracking Them*, WASH. TIMES, June 6, 1994, at A8).
- <sup>111</sup> Quinsey et al., *supra* note 57, at 119.
- <sup>112</sup> *Id.* at 125. The range of recidivism rates for untreated nonfamilial child molesters with male victims was slightly higher (13–40%) while the range for those who abused girls was somewhat lower (10–29%). See Barbaree and Marshall, *supra* note 105, at 371.
- <sup>113</sup> Quinsey et al., *supra* note 88.
- <sup>114</sup> See Gordon C. Nagayama Hall, *Sexual Offender Recidivism Revisited: A Meta-Analysis of Recent Treatment Studies*, 63 J. CONSULT. CLIN. PSYCHOL. 802 (Oct. 1995).
- <sup>115</sup> Email from Stephen J. Huot, Minnesota Department of Corrections (May 14 1997). The 3-year rate for Minnesota is reported to be 10%. Office of the Legislative Auditor, State of Minnesota, RECIDIVISM OF ADULT FELONS 55 (Table 3.2).
- <sup>116</sup> See WASHINGTON STATE INSTITUTE FOR PUBLIC POLICY, FINDINGS FROM THE COMMUNITY PROTECTION RESEARCH PROJECT: A CHARTBOOK 25 (5th Ed. 1996).
- <sup>117</sup> *Id.* at 25. This group consisted of individuals not eligible for the Special Sex Offender Sentencing Alternative, an option available for adult sex offenders convicted for the first time of a felony sex offense other than rape in the first or second degree. *Id.* at 5.
- <sup>118</sup> See DONNA D. SCHRAM & CHERYL DARLING MILLOY, WASH. STATE INST. PUB. POLICY, COMMUNITY NOTIFICATION: A STUDY OF OFFENDER CHARACTERISTICS AND RECIDIVISM 2, 14 (October 1995).
- <sup>119</sup> See Song & Lieb, *supra* note 102, at 31. This was a study with a 7-year follow-up period. See *id.*
- <sup>120</sup> Prentky et al., *supra* note 91, at 144, 148 (24-year follow-up; sample had average of three known sex offenses before release, and therefore “had a higher base rate probability of reoffense than would likely be observed in an unscreened sample of child molesters recruited from the general prison population”).
- <sup>121</sup> R. K. Hanson & M. T. Bussière, *supra* note 83.
- <sup>122</sup> *Id.*
- <sup>123</sup> See Hanson et al., *supra* note 101, at 647–48, 650.
- <sup>124</sup> See Vernon L. Quinsey, *Actuarial Prediction of Sexual Recidivism*, 10 J. OF INTERPERSONAL VIOLENCE 85, 94 (1995) (finding that 40% of group of rapists and child molesters were arrested, convicted, or returned to the psychiatric facility for a new violent or sex offense).

- <sup>125</sup> See Hanson, R. K., Steffy, R. A., & Gauthier, R. (1992), *Long-Term Follow-Up of Child Molesters: Risk Prediction and Treatment Outcome*. (User Report No. 1992-02). Ottawa: Corrections Branch, Ministry of the Solicitor General of Canada (reporting on a “risk checklist” that identified a subgroup in a group of child molesters with a 77% rate of sexual or violent recidivism.” *Id.* at Table 6. The base rate for sexual and/or violent crimes was 42%.)
- <sup>126</sup> See the Appendix [preceding footnotes] for an explanation of the methods used in Model 2.
- <sup>127</sup> See Grisso & Appelbaum, *supra* note 6, at 623-24.
- <sup>128</sup> See, e.g., *In re Linehan* (Linehan II), 544 N.W.2d 308, 315 (Minn. Ct. App. 1996), *aff’d InRe Linehan*, 557 N.W.2d 171 (Minn. 1996) (district court “noted the recidivism rate appeared too low”); *In re Hart*, C9-95-2057, 1996 Minn. App. LEXIS 156, at 12 (Minn. Ct. App. Feb. 9, 1996) (“The district court found no available base rate statistics for violent behavior among sex offenders at a reasonable degree of scientific certainty”).
- <sup>129</sup> See *In re Blodgett*, 510 N.W.2d 910 (Minn. 1994), *cert. denied*, 115 S. Ct. 146 (1994) (“most” sex offenders will be released after prison); Brooks, *supra* note 9, at 386 (sex offender commitment legislation “is intended to apply only to a relatively ‘small but dangerous group’ ”); Kirwin, *supra* note 7, at 25 (law applied “only to the relatively few, most dangerous, sexual predators”).
- <sup>130</sup> KAN. STAT. ANN. § 59-29a01 (1994); WASH. REV. CODE § 71.09.010 (1995).
- <sup>131</sup> *State v. Post*, 541 N. W.2d 115, 122 (Wis. 1995), *petition for cert. filed* (U.S. Mar. 7, 1996).
- <sup>132</sup> See Huot, *supra* note 68, at 5. During a four and one-half year period beginning 1991, approximately 1,000 sex offenders were released from correctional sentences in Minnesota. Of these, about 11% (111) were referred for sex offender commitments. Of the 111 referred, 43 (39%) had been committed, 22 (20%) were still in the referral/evaluation process at the end of the period. County attorneys decided not to proceed on 34 (31%) of the cases. Twelve (11%) of the referred individuals were not committed. During the same period, county attorneys filed petitions on 18 inmates who had not yet been referred. An upper limit on the commitment group would be 43 (committed) + 22 (in referral/evaluation) + 18 (nonreferral petitions) = 83, or 8.3% of the reference group. On the other hand, the ratio of petitions granted to petitions denied was 43/12. In other words, petitions were granted at the rate of .78. At this rate, we would expect that  $40 \times .78 = 31$  of the additional petitions would be granted, making a total of  $43 + 31 = 74$ , or 7.4% of the reference group. During the period 1990–95, 75 individuals were committed. (Information provided by Minnesota DHS.) The commitments of five were overturned. If we estimate that approximately 240 sex offenders are released from Minnesota prisons each year, see Huot, *supra* note 68, this figure would mean a commitment group of  $70/1200 = 5.8\%$ . Thus, 5% seems an appropriate floor for the “special” group and 15% a generous upper limit. See, also, Stephen J. Huot, *Demographics and Recidivism*, Huot, *Screening and Referral by the Department of Corrections*, in MINNESOTA INSTITUTE OF LEGAL EDUCATION, *SEXUAL PREDATORS: EVALUATING, TREATING & RELEASING* (June 1997) (“approximately 8% of sex offenders are referred” for commitment in Minnesota, and “about 50% of the referrals result in commitment”).
- The proportionate size of the commitment group is even smaller in the State of Washington. Out of 3,145 adult sex offenders released by the Department of Corrections during the first 5 years of the operation of the Washington Community Protection Act, 22 were tried and committed as sexually violent predators, and 9 others were awaiting trial. WASHINGTON STATE INSTITUTE FOR PUBLIC POLICY, *supra* note 116, at 18. If all nine of those awaiting trial are committed, the special group would represent 1% of the prison-release group. As Figure 3 shows, the size of the special group is directly related to the probability of recidivism in the commitment group. The numbers in Kansas are similar to those in Washington. Of 618 offenders “reviewed” since the implementation of the law, 9



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(1.5%) have been committed. See Jerry Adler and Peter Annin, *Too Dangerous to Set Free?*, NEWSWEEK, Dec. 9, 1996, 38, 41. Thus, the 5% floor suggested in the text is a conservative assumption.

<sup>133</sup> The calculations are described in the Appendix [preceding footnotes].

<sup>134</sup> Cf. Hanson, R. K., Steffy, R. A., & Gauthier, R. *supra*, note 125, at Table 6 (reporting on use of “risk checklist” that identified a group of child molesters with a recidivism rate of 77%).

<sup>135</sup> Hanson et al., *supra* note 123.

<sup>136</sup> See *supra*, discussion accompanying notes 99 to 122.

<sup>137</sup> See Douglas L. Epperson, James D. Kaul & Stephen J. Huot, *Predicting Risk of Recidivism for Incarcerated Sex Offenders: Updated Development on the Sex Offender Screening Tool (SOST)* (paper presented at the Fourteenth Annual Research and Treatment Conference of the Association for the Treatment of Sex Abusers, 1995) (on file with authors).

<sup>138</sup> *Id.*, at 3.

<sup>139</sup> *Id.*, Figure 1.

<sup>140</sup> See Gordon C. Nagayama Hall, *Prediction of Sexual Aggression*, 10 PSYCHOL. REV. 229, 239 (1990) (“The development of predictive strategies that combine the accuracy of statistical approaches and the practical considerations of clinical approaches would be desirable”); Quinsey et al., *supra* note 95, at 100 (recommending “anchoring” clinical judgments “by having the clinician start with an actuarial estimate of risk and then to alter it by examining dynamic variables, such as treatment outcome, treatment intensity, and supervision quality”).

<sup>141</sup> See *In re Linehan*, 518 N.W.2d 609, 616 (Minn. 1994) (Coyne, J., dissenting):

I am at a loss to understand what “the base rate statistics for violent behavior among individuals of this person’s background (e.g., data showing the rate at which rapists recidivate, the correlation between age and criminal sexual activity, etc.) ... can possibly contribute with respect to predicting the seriousness of the danger to the public posed by the release of a certain person. It is the habitual course of criminal sexual conduct revealed by the record of the person in question which provides a basis for predicting serious danger to the public, not the course of misconduct committed by other persons. Not only are the statistics concerning the violent behavior of others irrelevant, but it seems to me wrong to confine any person on the basis not of that person’s own prior conduct but on the basis of statistical evidence regarding the behavior of other people.

<sup>142</sup> See *Reno v. Flores*, 507 U.S. 292, 302 (1993) (emphasizing need to treat all persons as individuals, not as members of a class or group); Norman G. Poythress, *Expert Testimony on Violence and Dangerousness: Roles for Mental Health Professionals*, 5 FORENSIC REPORTS 135, 144 (1992) (“The qualitative fabric of our justice system demands that a person has the right to be tried on the merits of his or her own behavior; this policy imposes limitations on the courts’ receptivity to actuarial or aggregate data generally”).

<sup>143</sup> See Meehl, *supra* note 51, at 19–20; Underwood, *supra* note 36, at 1427. Justice Coyne’s dissent in *Linehan I*, *supra* note 141, rejects base rate data in favor of evidence of the past conduct of the individual. But surely any inference about the individual’s future must be based on knowledge of the behavior of other with similar patterns of past conduct. Absent such knowledge, predictions are nothing more than prejudice and stereotype.

<sup>144</sup> See Underwood, *supra* note 36, at 1427 (clinical decision making allows emphasis on individual differences; however, even clinical methods treat individuals as members of a class).

<sup>145</sup> See *supra* note 95 and accompanying text.

<sup>146</sup> As Saks and Kidd put it: “The comparison is not between humans and mathematics, but between humans deciding alone and humans deciding with the help of a tool.” Saks & Kidd, *supra* note 46, at 148.

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### Footnotes to Appendix

- <sup>1A</sup> Vernon L. Quinsey, *Review of the Washington State Special Commitment Center Program for Sexually Violent Predators*, in COMMUNITY PROTECTION RESEARCH PROJECT, WASHINGTON STATE INSTITUTE FOR PUBLIC POLICY, REVIEW OF SEXUAL PREDATOR PROGRAM app. (1992).
- <sup>2A</sup> See sources cited *supra* notes 84 through 88.
- <sup>3A</sup> This table is based on Stephen D. Hart et al., *supra* note 6, at 696.
- <sup>4A</sup> Hanson et al., *supra* note 101; Quinsey et al., *supra* note 57.
- <sup>5A</sup> Here, we make the simplifying assumption that the selection process is just as accurate in detecting recidivists (sensitivity) as it is in detecting nonrecidivists (specificity).